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COMPUTERWORLD

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Plot twist in 9370 story

Mini finds unexpected fans in stand-alone role

BY STANLEY GIBSON
and ROSEMARY HAMILTON
CW STAFF

IBM's 9370, having stumbled in its charge against Digital Equipment Corp.'s VAX mid-range series, is taking on an identity different from that originally planned by IBM.

Conceived as a corporate departmental processor in accounts with IBM 370-architecture mainframes, the 9370 appears to be having more success as a stand-alone host system for smaller business users. Even IBM has admitted surprise at the uses to which the slow-selling processor has been put.

"There are areas of business opportunity we would not have anticipated in October 1986, when we announced the 9370," said J. F. Skeen, IBM's director of 9370 marketing. Among them are new applications for computer-aided design and manufacturing as well as Pick Systems' Pick and MUMPS, both operating systems.

Although Skeen stopped short of revealing actual numbers of shipped or installed machines, he said 40% of the installed 9370s were the first computers ever installed at those sites.

"We weren't looking for a 9370 but for something to run CAD," said Steve Weage, marketing manager at Buckeye Custom Products in Troy, Mich.

Support costs for an IBM 4341 would have been beyond his small firm's budget, Weage said. The company is currently running two IBM 5080

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9370 finds its niche

Contrary to its projected function as a distributed system, IBM's 9370 often surfaces in a centralized role

Centralized

- Parts design at a Michigan automotive supplier
- Electronic mail at a New York business school
- File server for Toronto reporters using IBM Personal System/2s
- Automated teller machine hub at a Virginia savings bank
- Bridge and highway design at a Missouri agency

Distributed

- Field operations and support for the U.S. Postal Service

CW CHART

Pressure mounts as Dbase wait goes on

BY STEPHEN JONES
CW STAFF

TORRANCE, Calif. — Users of Ashton-Tate Corp.'s Dbase who thought their 2½-year wait for a souped-up data base management system was about to end found out last week that the upgrade waiting game is going into extra innings.

Ashton-Tate said Dbase IV Version 1.0, which is considered to be the cornerstone of the company's future, could ship as much as two months later than its original July 31 target date.

A holdup of Dbase IV 1.0 could also delay the release of Version 1.1, which includes a critical SQL implementation that links the program to the upcoming SQL Server being developed by Microsoft Corp. and Sybase, Inc. Observers said Version 1.1 will take a minimum of six extra months to develop once Dbase

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"We will stop short of a product announcement until we're ready to show it. . . . All you've doing is telling the consumer to hold off for a product that isn't available."

ED ESBER, CHAIRMAN, ASHTON-TATE, OCTOBER 1987

"Project timetables are estimates [and] subject to some variability."

LUTHER NUSSBAUM, PRESIDENT, ASHTON-TATE, LAST WEEK

Patenting the MIS strategic edge

BY MITCH BETTS
CW STAFF

WASHINGTON, D.C. — Leading firms in the financial services industry are arming themselves with an unusual new weapon in the battle to gain competitive advantage with their information systems. Just as computer vendors have protected hardware technologies by patenting proprietary developments, these computer users are discovering that a U.S. patent can prevent their competitors from using the same automated process for 17 years.

For example, The Advest Group, Inc., a Hartford, Conn.-based financial services firm, obtained a patent last year for an MIS system called Bank Link, which moves money from investors' bank accounts to make stock transactions. U.S. Patent No. 4,694,397 calls it the "Banking/Brokerage Computer Interface System."

Advest Group Vice-President and Director of MIS John Reynolds said the firm sought the patent to protect its competitive advantage. "We use it every day, and we certainly would not want it patented by anybody else and lock our-

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End of the line for high-tech whiz

BY NELL MARGOLIS
CW STAFF

Last month, 24-year-old computer entrepreneur Tex Zachary Hildreth told a reporter that he never read fiction. Last week, it appeared that he may have been living it instead, as a bizarre series of events unfolding in a three-day period left his 5-year-old company in ruins and Hildreth hospitalized following an apparent suicide attempt.

Hildreth, the founder and chief executive officer of Braintree, Mass.-based Massdata Corp., apparently fled across the state line last Tuesday after, in quick succession, a bank foreclosed on Massdata, a warrant went out for Hildreth's arrest on felony larceny charges and Hildreth collapsed in his office. He and his mother, Rose, were picked up by Manchester, N.H., police at a Manchester motel, after both apparently tried to take their lives.

The week's events, said R. Charles Gilfix, president of a networking services company that was involved in Massdata's first joint venture, left most Massdata employees shocked and bitter. A large percent of Massdata employees, Gilfix said, were also Massdata stockholders.

It now appears that Hildreth's lavish personal and business lifestyle was funded not by booming revenue and personal wealth, as he claimed, but by the funds that employees and outsiders advanced to him in exchange for stock.

"Tex lied to [his employees] about the company, he lied about money, and they're all angry as hell," Gilfix said. "Especially the ones who are owed money by Tex — and there's a lot of money owed."

Ultimate revenge

Self-described on many occasions as formerly a fat and lonely high school computer jockey who regarded entrepreneurial success as the ultimate *Revenge of the Nerds*, Hildreth was variously referred to by business acquaintances last week as "charismatic to the point of being hypnotic," "a computer whiz kid" and "a genuine wacko." He founded Massdata while still

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"Assuming it will lower the price points for systems built around it, [the P9] basically blows the 8086 market away and pushes the 80286 market down to sub-$1,000."

MICHAEL GOULDE
CAP INTERNATIONAL, INC.

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1-2-3 peekaboo

Users view 1-2-3/G, Lotus/DBMS demos

BY DOUGLAS BARNEY
CW STAFF

BOSTON — Despite a veil of secrecy that continued to shroud many products announced a year ago, Lotus Development Corp. provided selective early peeks at two key programs, 1-2-3/G and Lotus/DBMS, to some of the hundreds of customers attending the firm's annual user gathering last week.

Users who saw demos of 1-2-3/G described a product that, by following the dictates of Microsoft Corp.'s OS/2 Presentation Manager interface, looked remarkably like Microsoft's Excel.

Lotus, however, pledges to maintain the familiar look and feel of 1-2-3 while moving 1-2-3/G into the new graphical user interface environment, company officials have said.

Lotus has given no time frame for a 1-2-3/G shipment. The product is, to a large extent, held hostage by the schedule for the Presentation Manager, which will not ship until late this year.

Sneak peek

Lotus also gave some users an early look at Lotus/DBMS, the server-based product that includes an array of graphical tools for ad hoc queries, application development, screen painting and report generation.

Also based on the Presentation Manager, the front ends provide query capability via pull-down menus as well as application development and more complex queries via a graphical front end to the Lotus Extended Application Facility (LEAF), a high-level language specific to Lotus products that is set to ship later this year.

The graphical front end to LEAF was described by one user as object-oriented. "You are treating things as an object, as opposed to individual components," the user said. The front ends will also eventually mix elements of hypertext and hypermedia. "You can take advantage of powerful graphics and hypertext- and hypermedia-type facilities, such as blending pictures with text," he said.

The hypertext approach was recently popularized by Apple Computer, Inc.'s Hypercard, which links pieces of data via a number of relationships and includes graphical representations of items relevant to the data.

But as with 1-2-3/G and several other products, Lotus has provided no delivery dates for Lotus/DBMS.

This year's Lotus Week was a bit marred by the delay of 1-2-3, Release 3.0, which the firm had hoped to ship just prior to the event. At the opening speech, Lotus President Jim P. Manzi "confessed" that the firm had hoped to have shipped Release 3.0 by now.

'Check is in the E-mail'

"I'm sure there are some who think this is the software industry's version of 'the check is in the E-mail,' " Manzi quipped.

But Manzi argued that Release 3.0, which he called a megarelease, was worth the wait. The product, which is supposed to include improved graphics, three-dimensional and linked spreadsheets and will eliminate a lot of awkward procedures that characterize today's 1-2-3, also has a higher purpose.

Lotus's Manzi

"We intend to maintain our advantage by providing a level of compatibility across systems between not just character-based products and graphical-based products, but across multiple platforms on Unix workstations, the Macintosh, and mainframes," Manzi said. Release 3.0 is the starting point of this strategy, Lotus officials have said.

Despite the delay of Release 3.0 to the end of this year, the product was clearly the center of attention. Most users, in fact, preferred not to worry about products such as Lotus/DBMS, which are not expected to ship until next year.

Release 3.0 moves one step up the networking power curve, according to Robert Perry, associate product marketing manager at Lotus's personal computer spreadsheet division. One key feature allows users to determine the type of file recalled. Users can call up a read-only file that can be modified, but is stored under another file name.

There are still nagging questions about the Release 3.0 networking strategy, issues made more complex by the fact that the product will run under both Microsoft's MS-DOS and OS/2.

Specifically, Lotus has yet to lay out which OS/2 networking operating systems Release 3.0 will support.

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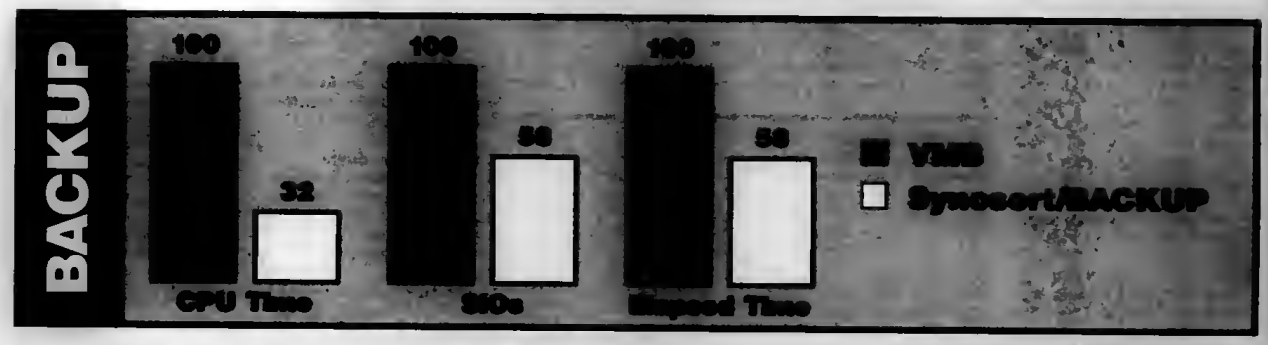

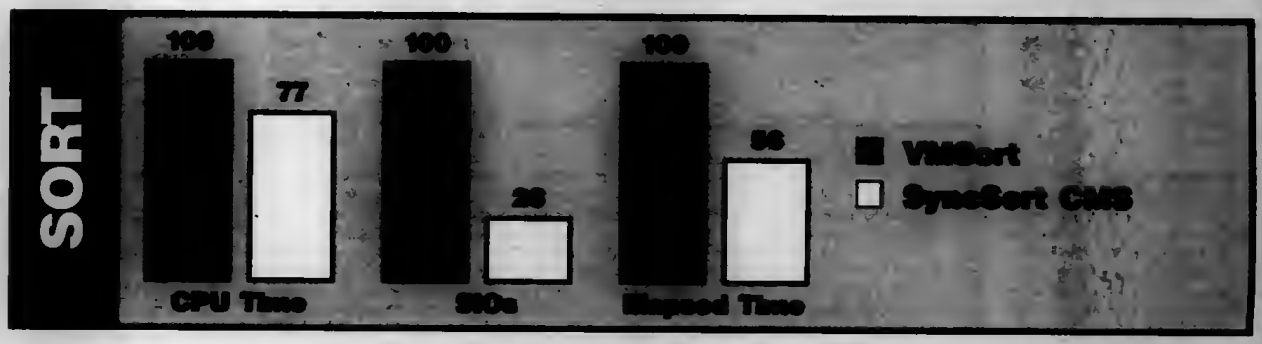

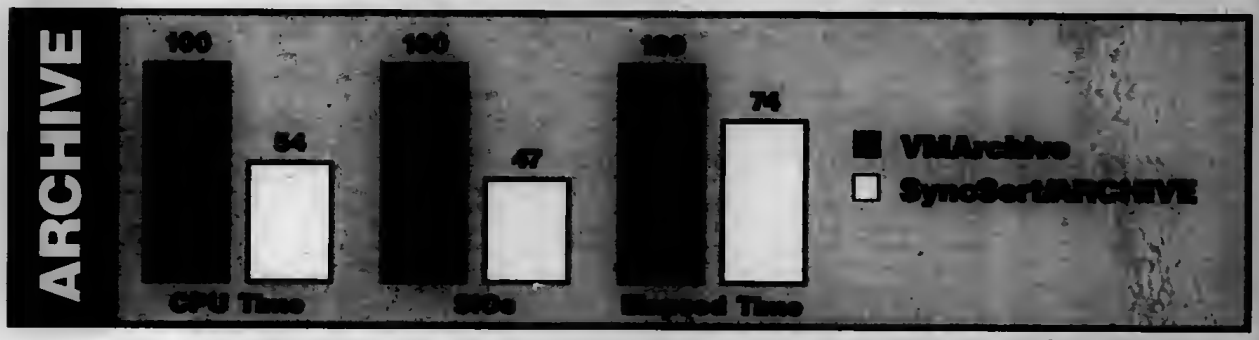

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DB2 sparks demand for 4GLs

BY CHARLES BABCOCK
CW STAFF

Fourth-generation languages, lately viewed as growing long in the tooth, are getting a mid-life kicker through their ability to work with IBM's DB2.

From Information Builders, Inc.'s Focus and On-Line Software International, Inc.'s Ramis to Applied Data Research, Inc.'s Ideal, Software AG of North America's Natural 2, Must Software International's Nomad2 and others, the fourth-generation languages are showing amazing agility and grace for their age. What were once candidates for the old folks' home are now runners on the relational fast track, accessing data in a variety of files and performing technical feats, such as outer joins, that cannot otherwise be done with DB2.

"A key strategic factor for Focus is its ability to access not only DB2 tables but also [IBM's] IMS, VSAM and sequential files," said Terry Mason, data base specialist with the Bank of Montreal and a supervisor of Focus use with DB2.

'A strong card'

That multiple access capability, along with their standard development framework, "is going to be a strong card" for the fourth-generation languages, noted Ed Acley, market researcher with International Data Corp. in Framingham, Mass.

It is difficult to say by how much the fourth-generation languages are being helped by DB2. The languages are entrenched in 19% of the mainframe sites in the U.S. Figures from Focus Research Systems, Inc. indicate that 3.3% growth is anticipated in 1988, based on user-buying plans — a reversal from the last six months, which had seen declining sales for several of them.

Many observers attributed the reversal exclusively to the follow-on demand created by DB2. "Everything that works with DB2 is going to be carried along with it," predicted Jim Russo, marketing manager at Focus Research. Although, he added, some of the new sales may be related to increasing fourth-generation language use on the Digital Equipment Corp. VAX.

Some 60% to 70% of new Nomad2 sales go into sites with relational data base management systems such as DB2, IBM's SQL/DS and Teradata Corp.'s data base machines, said Nicholas Rawlings, vice-president of research and development at Must Software International in Norwalk, Conn.

The fourth-generation languages have been rapidly enhanced over the last 12 to 18 months to perform new functions with DB2. Some users have found they cannot get the same capability elsewhere.

The ability of Ideal to supply both dynamic and static SQL in an application, along with change control over its development, makes the language highly useful with DB2, said Philip J. Gray, manager of systems services at Datasolve in Sunbury, England.

"Static SQL was one of the things that impressed our technical people. No other product has that," said Bob Harrison, product marketing manager for Datacrown Corp., a Toronto service bureau that now offers Ideal for DB2.

An IBM offering, Cross System Product (CSP), also incorporates dynamic and static SQL. But it is a procedural, programmer's environment that has difficulty sharing files for team development efforts, according to CSP users.

Several observers say that CSP, which IBM terms a strategic product, is benefiting less from DB2's success than the established fourth-generation languages.

CSP is good for building online transaction processor applications, said one Focus and CSP user who requested anonymity, "but I don't know what else you would want to do with it."

Focus is useful for working with statistics and turning out complex reports, he added. "I wouldn't even attempt to do that with CSP," he said.

Compatibility counts

In addition to superior reporting, the fourth-generation languages frequently offer greater compatibility between their dictionaries and DB2's catalog than does CSP.

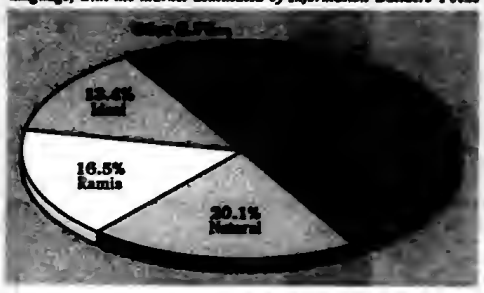
The dictionaries of Ideal and Natural 2, for example, are capable of using the same 18-character data names as DB2, while CSP is restricted to eight-character names.

The dictionaries for Nomad2, Natural 2 and other fourth-generation languages offer greater functionality than does the DB2 catalog. They store headers for standard reports, data integrity rules and definitions of routine, calculated values. The DB2 catalog does not, noted users and spokesmen for the fourth-generation language suppliers.

Robert Montero, data base analyst at Chevron Information Technology in San Ramon, Calif., said his firm used Nomad 2 to execute outer joins against Chevron's parts inventory data base. The outer joins tell the firm which parts it has in stock with no outstanding orders. The information helps the company plan inventory levels, Montero said.

Generation gap

Almost one in five IBM mainframe sites use a fourth-generation language, with the market dominated by Information Builders' Focus



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Import rules nettle software group

BY MITCH BETTS
CW STAFF

WASHINGTON, D.C. — ADAPSO, a software industry association, last week declared that Brazil's new software import regulations are unfair to U.S. vendors and urged the Reagan administration to retaliate with trade sanctions.

"The only way to get this thing resolved is to keep the pressure on," said ADAPSO spokesman Christopher Carleton at a caucus held here jointly with the Information Industry Association.

The regulations, issued May 12, give Brazil's Secretariat for Informatics "wide latitude for subjective, rather than objective, decisions" to prevent the sale of U.S. software in that country, ADAPSO officials said.

Under Brazil's current software law, foreign suppliers of software can obtain commercialization licenses if there is no "similar" product offered by a domestic supplier.

But ADAPSO charged that the definition of "similar" is so vague that many non-Brazilian products will be excluded.

For example, the regulations would consider any two programs performing the same application — such as word processing — in the same hardware and operating system environment to be functionally equivalent, ADAPSO said.

The Reagan administration last year threatened to impose $105 million in punitive tariffs on Brazilian imports, but postponed the sanctions while Brazil drafted its software regulations [CW, March 7].

The Reagan administration is collecting industry and agency comments on the regulations before developing a response, said Alan F. Holmer, a deputy U.S. trade representative.

"Regrettably, after years of frustration, retaliation may be the only way to resolve this matter," said ADAPSO Chairman Jack Courtney, president of Computer Task Group, Inc., in a statement.

Reagan vetos trade bill

WASHINGTON, D.C. — President Reagan vetoed the omnibus trade bill last week but said he hopes Congress will pass a pared-down version of the bill that would preserve many of the features sought by the computer industry.

The legislation would reform U.S. trade policy and includes provisions to liberalize export controls, seek greater access to foreign telecommunications markets and strengthen intellectual property rights [CW, May 9].

Reagan vetoed the bill primarily because of a provision requiring businesses to give 60 days of advance notice for plant closings and major layoffs.

The U.S. House of Representatives pounced on the veto, voting 308-113 to override it, but the Senate is expected to be a few votes short of the two-thirds majority needed for an override on the presidential veto.

MITCH BETTS

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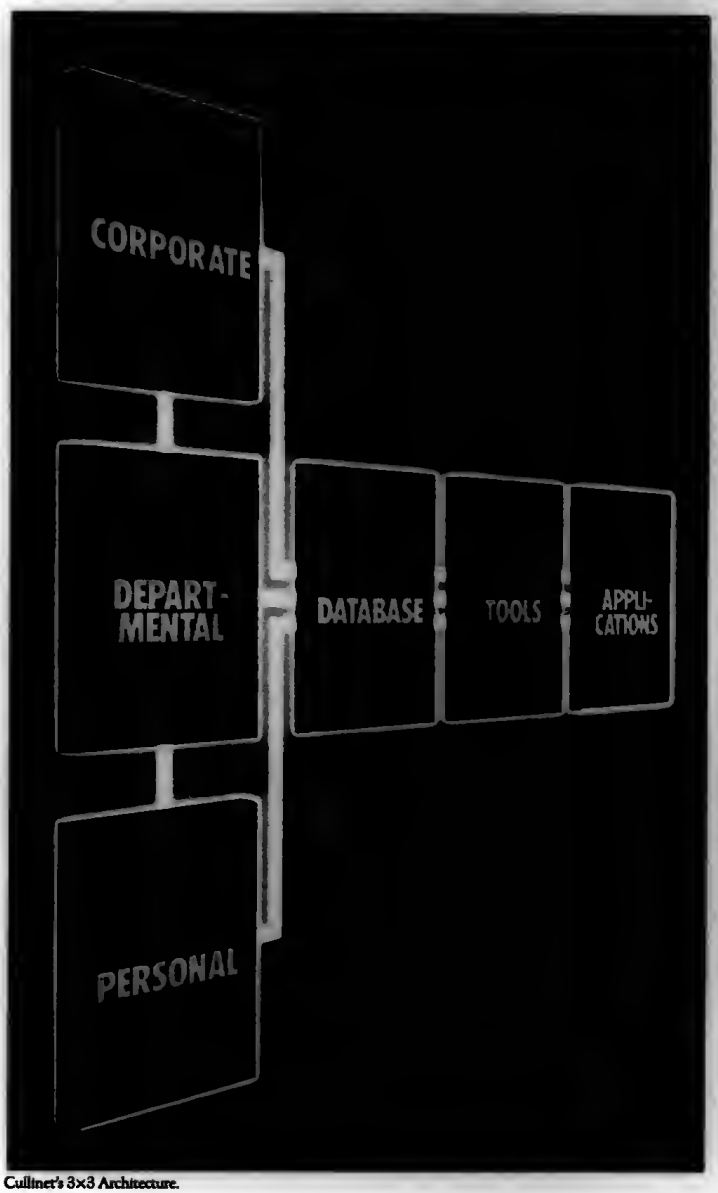

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Elkay recovers fast from fire

Planning puts firm back in business hours after disaster

BY JEAN S. BOZMAN
CW STAFF

OAK BROOK, Ill. — Sometimes the best way to do something is to do it yourself.

That was the lesson learned by Elkay Manufacturing Co., headquartered here, which decided four years ago to provide its own backup in case of disaster. While dozens of its larger corporate neighbors in western Chicago suburbs struggled to regain normal operations after they were disrupted by a May 8 fire at an Illinois Bell switching station [CW, May 16], Elkay was able to continue a special sales promotion.

If disaster recovery seems easy for Elkay, it could be because the $140 million stainless-steel sink and plumbing fixture supplier has been practicing since 1984. "We did a good planning job in 1983, and it paid off for us this time," said Jim Scott, director of administrative services. Elkay, which divided its operations into two data centers four years ago, was able to resume normal operations within hours.

The telephone outage severed a vital T1 dedicated data line linking the data centers, but MIS compensated by shuttling data tapes and personnel between the two centers. Just as Elkay resumed normal operations at noon May 9, several nearby corporations were moving to hot-site recovery services and others resorted to buying expensive microwave and satellite links.

By the end of last week, only half of the 35,000 lines destroyed by the fire had been reconnected to a new Illinois Bell 5 ESS digital telephone switch.

Flexibility was built in to Elkay's distributed data environment, which links six factories with the Oak Brook corporate headquarters. "We decided in 1984 that it would be better to move away from a single-system, single-site situation," said Scott, who oversees all corporate data processing and applications development. "That gave us two data centers, each of which was able to back up our critical operations."

The answer to the telephone outage at the Oak Brook facility was simple: Instead of moving the data systems, Elkay's MIS department decided to match the end users to their application. The company shuttled 35 people between the Oak Brook center and a second center in Broadview, Ill., seven miles away. "Our programming staff didn't need to use telephones," said Biagio D'Ugo, manager of DP operations. "But our sales and accounting staff did need to use the telephones as well as our order-entry system."

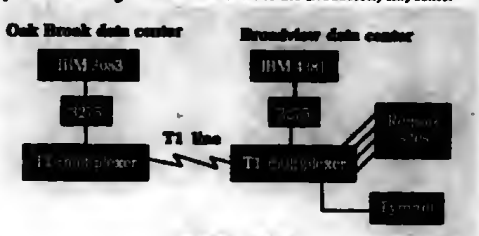
The Oak Brook site, which regained its T1 link last Monday, houses an IBM 3083 that supports end-user inquiries under IBM's VM/SP operating system. An IBM 4381 runs DOS/VSE manufacturing applications and on-line order entry at the Broadview factory location, which never lost telephone service. About 15 programmers moved to phoneless Oak Brook, taking along their data tapes. Meanwhile, terminals were set up around the Broadview conference table so accountants could continue their financial work.

As it happened, Elkay was in the process of switching the order-entry and manufacturing applications to the larger IBM 3083 when the telephone disaster hit on a Sunday night, knocking out Oak Brook's phone lines. "By Monday morning, we had identical production systems up and running on both machines," Scott said. Even without the planned switch over, either machine is capable of taking over the other's function in less than a day, he said.

Regular phone service was restored to the Oak Brook location May 20, and personnel were back at their original locations last Wednesday.

Simple solution

When the phones went dead in Oak Brook, Ill., Elkay transferred personnel needing interactive data use to the Broadview, Ill., center



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CW CHART

3Com execs quit, plan start-up

BY KATHY CHIN LEONG
CW STAFF

SANTA CLARA, Calif. — William Carrico, 3Com Corp. president, and Judy Estrin, general manager of the Bridge Communications division, resigned last week with intentions of starting another data communications company.

Only nine months after the 3Com merger with Bridge Communications, Inc., the married co-founders of Bridge are planning another start-up company in Silicon Valley and will return to the industry in September, Carrico announced.

"I like the comfort of a start-up company, being involved in day-to-day events," he said. While plans for a new company are still in the research stage, Carrico said he is interested in the Fiber Distributed Data Interface market and stressed that he does not intend to erect a 3Com competitor.

On good terms

The parting is an amicable one, Carrico said. "We believe the merger was absolutely the right thing to do. We have no regrets about anything."

Carrico agreed, however, that the two company cultures were quite distinct.

Bridge was operated in a results-oriented fashion in which Carrico and Estrin were closely involved in the company's details.

At 3Com, Chairman Bill Krause held fast to a management style that allowed managers more decision-making power and independence, 3Com sources said.

Krause noted that while company cultures were different, "we had complementary management skills. I'm very disappointed in losing him, but I admire his courage to recognize early on that this is what he wants to do."

'It was frustrating'

According to one 3Com employee, "Bill and Judy were in a completely different environment where things didn't happen as quickly as they did at Bridge. I'm sure it was frustrating for them."

Krause will serve as 3Com president, while Howard Charney, currently vice-president and general manager for hardware products, will replace Estrin as general manager of Bridge.

Bob Metcalfe will take over as general manager of hardware.

Dbase

FROM PAGE 1

IV 1.0 ships.

Ashton-Tate has not given up on its July 31 deadline, but Luther Nussbaum, president and chief operating officer, said that delays in debugging the 400,000-line program could push its release back to Sept. 30.

That could leave Ashton-Tate gasping for air in the relational DBMS market. Until it comes out with a full SQL implementation that ties Dbase into a relational back-end server, analysts have said that Ashton-Tate will not be able to compete in the MIS arena with the likes of IBM and Lotus Development Corp. IBM, for one, expects to ship a rival package, OS/2 Extended Edition, by the end of July.

While Ashton-Tate tried to downplay the chance of a significant delay, others — even those that generally applaud the company — said the announcement points to serious problems for Ashton-Tate and the future of its flagship product.

"Ashton-Tate is in big, big trouble," said Richard Finkelstein, president of Performance Computing, Inc. in Chicago. "The more time corporate users have to rethink sticking with Dbase, the more likely they are to move to something else like IBM's OS/2 Extended."

> "ASHTON-TATE is in big, big trouble. The more time corporate users have to rethink sticking with Dbase, the more likely they are to move to something else."
>
> RICHARD FINKELSTEIN
> PERFORMANCE COMPUTING, INC.

Many users, seemingly jaded by more than two years of waiting for an update, were not as concerned by the additional delay. "I'm a little disappointed, but not surprised," said Gary Oppenhuis, manager for data systems at Touche Ross & Co. in Chicago. "I'd rather have a relatively bug-free product than one that makes a certain target date."

Comes with the territory

With other companies also missing important shipping deadlines — including Lotus's recent six-month delay of a 1-2-3 upgrade — some users said that late deliveries simply come with the territory in MIS. "Late shipments have become a way of life these days," said Kuen Ling, a Dbase user and MIS project manager at Metropolitan Life Insurance Co. in New York.

Despite the company's occasional criticism of competing firms who announce far ahead of product availability, Ashton-Tate's Nussbaum conceded last week that "Project timetables are estimates that are subject to some variability."

Yet, software vendors vying to have their data base packages included in the two- and three-year buying plans of most MIS shops will need to base their products on a stable and proven SQL backbone. Performance Computing's Finkelstein said that development delays and problems integrating SQL with the native Dbase language code could make Dbase IV a shaky alternative at best.

Ashton-Tate defended the technological foundation of Dbase IV, noting that the new product has met all of its performance and memory requirements.

"There are no 100% guarantees, but we're making significant enough progress to ship the product by September," said Lydia Dobyns, Ashton-Tate's vice-president of marketing.

Ashton-Tate rivals, however, were quick to point out that the company has yet to ship beta code to corporate users and that bugs might be the least of the program's problems.

"At this point, Dbase IV is dreamware; the message to me is that they're having trouble delivering on the core technology," said Richard Schwartz, vice-president of data base technology for Paradox developer Borland International.

And with Dbase sales accounting for more than half of its annual revenue, Ashton-Tate cannot afford to let many more Dbase users defect to a gaggle of so-called clone makers such as Worldtech Systems, Inc. "More delay means there is more of a risk of losing market share, with the clones continuing to nibble at their heels," said William Shattuck, a software analyst with Montgomery Securities in San Francisco.

Ashton-Tate also announced last week an update to its Framework integrated decision-support software for DOS-based computers. Framework III is scheduled to ship by July 31 and sell for $695. A five-user network version reportedly will ship by October and sell for $995.

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9370

FROM PAGE 1

graphics terminals with the IBM-marketed computer-graphics-aided three-dimensional interactive application, or Catia, on an IBM 9370 Model 40 running under VM/IS.

Johnson & Johnson Baby Products in Skillman, N.J., runs Cadam, Inc.'s Cadam on a Model 60 under VM/IS. Seven 5080 terminals are connected to the minicomputer, which is not connected to a larger system, said Johnson & Johnson engineering manager Joe Hayek.

More for their life?

Sears, Roebuck and Co. is using about 25 9370 Model 40s and 60s — not as departmental processors, but as distributed print servers for the publication of corporate documents.

At the same time, many other large accounts that were the original target of IBM's 9370-based distributed processing strategy have declined to use it. A number have reportedly expressed more interest in personal computer local-area networks than the 9370.

"Among big users, the negative attitude toward the 9370 has been hardening," commented John Logan, vice-president with the Boston-based Aberdeen Group.

Major software developers, although saying that many of their existing mainframe packages will run on the 9370, are not investing additional energy in optimizing those packages or in developing new packages for the 9370 (see story below).

But while the software world's heavy hitters have turned their backs on the processor, smaller developers with niche products have been more attracted to the 9370. The Ultimate Corp. in East Hanover, N.J., resells the 9370 with its version of the Pick system; Mitrol, Inc., in Woburn, Mass., sells a manufacturing automation package; and Albany, N.Y.-based Chart, Inc. is porting its 4300-based health care package to the 9370.

"The 9370 has not taken off as people had thought, but in the last few months, we have seen an uptick," said Mike Zisman, president of Soft Switch, Inc. in Wayne, Pa. Soft Switch introduced a corporate electronic mail system based on the 9370 last year. Soft Switch became a member of IBM's Industry Marketing Assistance Program in January.

To make installation easier for customers, IBM has offered to preload operating systems, including its VM, VSE and DPPX/370, onto the 9370 before it is shipped from the manufacturing facility in Endicott, N.Y. The option was announced in March and is set to be available July 15.

Such steps could help overcome the ease-of-use roadblock that many report when confronting VM or VSE on the processor. "I came from a System/38 background, so I know ease of use; I don't consider the 9370 to be that. You need a staff to run it," said Donald Zager, director of DP at Boznutos, Inc., a Cheshire, Conn., food wholesaler.

Boznutos moved from a 4341 running VM and VSE to a 9370 Model 90 running VSE Release 3.1 in November 1987. "Since it was touted as an end-user machine, I expected the software to be much easier than it is," Zager said.

Upstaged

Ironically, the 9370's unexpected progress in niche markets may be jeopardized by the rollout of Silverlake, IBM's System/36 and 38 follow-on processor that is expected to be announced June 21. As a follow-on to the System/36 and 38 processors, Silverlake is expected to be relatively easy to use and will draw on the wealth of applications for those machines, which are largely for smaller businesses.

Thus, Silverlake could drain interest from the 9370 in one of the areas in which it has been strongest.

And whether the 9370 will be able to rebound in the market it was intended for remains in question. Despite a loaner program in which IBM is giving large accounts free use of 9370s for development, there is little evidence that many firms have big plans for the processor.

"We haven't found any corporations that have large quantities installed," said Ralph Bush, an analyst at Computer Intelligence in La Jolla, Calif. Computer Intelligence has estimated that 3,000 systems are currently installed in the U.S. Three or four systems was the top number at any given location, Bush said.

Special delivery

A portfolio of customer installations recently released by IBM shows 12 installations, only one of which — the much-publicised U.S. Postal Service order for at least 750 systems — is for a large number of machines.

Analyst Logan said the office automation software that will likely be announced with Silverlake will also run on the 9370. This could help get the 9370 over the hump in major corporations, he said. "It will be SAA office automation software for both the 9370 and Silverlake."

Robert Wilson, vice-president and general manager of information systems at Dataquest, Inc. in San Jose, Calif., said, "What is missing is packaged solutions. This is an office system. Users do not want to run a mainframe package on it."

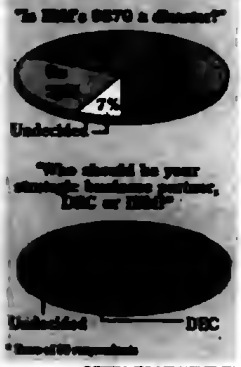
Wilson took the view that Silverlake will actually help the 9370 by clearing up hazy distinctions between the two machines. "Silverlake's announcement will convince a lot of people that IBM is serious about the mid-range," he said. "By this time next year, you will see enough applications on the 9370 to assure its future."

Midwest correspondent Jean S. Bozman contributed to this report.

Mixed feelings

*At a recent seminar on mid-range options, most MIS execs surveyed said the 9370 is a flop but that they still prefer IBM as a supplier**

PERCENT OF RESPONDENTS



*Base of 50 respondents

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CW CHART

Chip could cut prices

IBM, Compaq said to be investigating Intel P9

BY JULIE PITTA
and ED SCANNELL
CW STAFF

Recent rumblings about IBM and Compaq Computer Corp. planning to use Intel Corp.'s unannounced P9 chip have created some interesting marketing possibilities for manufacturers of Intel 80286- and 80386-based systems.

The P9, which has many of the processing powers of the 386 but communicates with a system's bus via a 16-bit data path like the 286, would essentially put 80386-based systems in users' hands for less than $4,000, some analysts said.

Such a system would force both companies to push their current 80286-based lines' prices down to less than $2,500. However, some analysts said sales of P9-based systems will more than cover the revenue lost from price reductions on existing 286 lines.

"It is almost a win-win situation. What loses is the full 32-bit, 386-based systems. DOS capability under P9 is going to put a damper on interest in moving to a full 32-bit environment. It will probably tone down demand for a 32-bit 386 version of OS/2," said Michael Goulde, director of CAP International, Inc., a market research firm in Norwell, Mass.

"Assuming it will lower the price points for systems built around it, [the P9] basically blows the 8086 market away and pushes the 80286 market down to sub-$1,000," Goulde said.

Representatives of two corporate accounts briefed by IBM over the last month said the company plans to introduce a system using the P9 chip by year's end. Some industry observers have speculated that Compaq will roll out a similar system by the end of the year.

Interest piqued

Both companies declined to comment on their plans to use the chip, although Compaq spokesman Lynn Parsons said his firm would certainly "be interested in such a product."

"The P9 allows Intel to penetrate the market that the 286 is holding right now and wean the PC arena toward Intel's proprietary 386 technology and away from the commodity 286," said Drew Peck, a technology analyst at Donaldson, Lufkin and Jenrette, Inc. in New York.

The P9 was originally scheduled to be available by now, Peck said, but is not because Intel is focusing its attention on meeting demand for its 80386 chip, which brings higher margins than the P9.

The good news about P9 is that it allows users to run 32-bit protected mode software such as Microsoft Corp.'s Windows/386 and Xenix on less expensive machines. On the downside, they will run those programs more slowly.

"The P9 is a mixed bag," Peck said. "System vendors can tell their customers that it can run all 32-bit software that will be available in the next year, but they'll still have to contend with the 16-bit I/O bottleneck."

IBM reportedly will develop and manufacture its P9-based systems in Austin, Texas. The charter of the company's Austin facility is to turn out systems, including those based on the P9, for less than $3,000. If they fail to produce a system at that price point, they will lose that project to IBM's Boca Raton, Fla., plant, according to one source.

"If a 386 is manufactured in Austin, it has to be $3,000 or under. It's IBM's way of introducing some healthy internal competition," the source said.

An outcast among developers

Large software developers, facing hard choices about where to spend their development dollars, are opting to invest time and energy in IBM's Silverlake or Digital Equipment Corp.'s VAX, saying that they will invest in IBM's 9370 only when it sells in sufficient numbers.

One user reported that developer ambivalence made his search for a 9370 application more difficult.

"There are plenty of 370 applications, but, in reality, if you go to MSA or M&D, they say, 'We won't sell you one for the 9370.' I felt they feared that if you loaded it, it would bring the system down to a crawl," said Stewart Bechler, director of MIS at Odd Lot Trading, Inc. in Elizabeth, N.J.

A McCormack & Dodge Corp. spokesman said his firm is exercising caution in recommending the machine.

Shortly after the 9370 was announced in 1986, Cullinet Software, Inc. said it would develop a data base management system for the machine. However, the 9370 project is now on hold, according to Gene Kaplan, Cullinet's project manager for systems. Cullinet has since put all its marbles behind the VAX for mid-range development, having recently announced IDMS/SQL, a VAX-based DBMS. Kaplan said the firm has no definite plans for Silverlake.

Management Science America, Inc. (MSA) is stressing Silverlake development, said Brian Cohen, the firm's director of technology and research.

"The No. 1 priority is SAA. Silverlake is a big part of that," Cohen said, referring to IBM's Systems Application Architecture. "We have limited resources, and right now the 9370 just doesn't seem fruitful. It doesn't come first on our list."

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COMPUTERWORLD

AT&T rethinks Olivetti ties

Seesaw teeters as alliance fares poorly, 3B line flounders in Europe

BY ALAN ALPER
CW STAFF

AT&T said last week that it is reassessing its relationships with overseas firms, including an agreement to resell Ing. C. Olivetti & Co. microcomputers.

Speaking to AT&T's board of international advisers in Madrid, AT&T Chairman Robert Allen said the re-evaluation was prompted in part by recent fluctuations in currency exchange rates that have made foreign-made goods more expensive.

Analysts contend the reassessment has more to do with the lack of success of AT&T's overseas partnerships. AT&T, which owns 22% of Olivetti, has had a tough time remarketing the Italian firm's micros in the U.S. for the last four years. Olivetti has not fared any better reselling AT&T's 3B line of minicomputers in Europe.

Just one of the issues

An AT&T spokesman said the reassessment of the Olivetti relationship does not necessarily mean a change of suppliers is imminent. "We have no present plans to change our personal computer purchasing agreement with Olivetti," he said. "It is one of a number of issues under discussion as we reassess our alliance in the best interest of both companies."

The spokesman said discussions between the two companies are focusing on the resale of AT&T's 3B line by Olivetti in Europe.

Although Olivetti recently introduced its own line of minicomputers, according to a company spokesman, it has no intention of halting its purchases of AT&T 3B minis.

Observers contend that AT&T has never made any money selling Olivetti micros and will have to change suppliers if it wants to stay in the business. Sources close to AT&T said the company could be looking at a variety of lower cost micro manufacturers, including those based in Korea.

AT&T is reportedly also interested in having its value-added resellers (VAR) handle Sun Microsystems, Inc.'s new Intel Corp. 80386-based micros, which run Microsoft Corp. MS-DOS applications as tasks under Unix.

Such a move would strengthen the evolving relationship between the two firms. This alliance started with AT&T's agreement to purchase an equity stake in the Mountain View, Calif., company and includes joint efforts to forge Unix standards and AT&T's licensing of Sun's Scalable Processor Architecture reduced instruction set computing architecture.

Impending deal

AT&T VARs said they expect a deal to be concluded between the companies in the near term. "I'm optimistic that my channel will get the 386I from Sun," noted Lynn Roloff, president of Southwest Dataproducts, Inc., a Houston-based AT&T VAR.

Allen's comments follow the recent departure of AT&T's Data Systems Group President Vittorio Cassoni, who returned to Olivetti as chief executive officer amid reports of strained relations between the two firms. AT&T recently declined to increase its stake in Olivetti, while the Italian firm is said to be disenchanted with AT&T's micro sales effort.

"The violent movement on the dollar/lira relationship would have called the [AT&T and Olivetti] alliance into question, if nothing else," noted Bill Coleman, an analyst at James Capel & Co. in London. "AT&T has a lot of problems in data processing and doesn't need a high-cost hardware producer."

Amiel Kornel, a Paris correspondent for IDG News Service, contributed to this report.

Patenting

FROM PAGE 1

selves out," he said.

Eventually, Advest plans to exploit the patent by determining whether other firms are using its process and, if so, to charge them royalties.

"There's no reason why you shouldn't be compensated if you're willing to stick your neck out, put your money up and develop something unique," Reynolds said.

"We may be about to witness a flood of patents" for computer software, including automated methods of doing business, said David Bender, an attorney at the New York law firm of White & Case.

MIS PATENTS are unusual because they break the conventional wisdom that patents are for better mousetraps and zippers, not for computer software.

On the rise

In the last two years there has been a sharp increase in the number of patents issued for automated systems, patent attorneys said, and more are on the way.

Robert Greene Sterne, a patent expert at the Washington law firm of Saidman, Sterne, Kessler & Goldstein, said that his firm has filed about a dozen patent applications for specific expert systems developed by Fortune 500 user organizations.

Last month, the U.S. Patent and Trademark Office granted U.S. Patent No. 4,736,294 to the Royal Bank of Canada in Toronto for an MIS system that manages car loans.

In addition, Bender cited the following MIS patents:

- A securities brokerage cash management system, U.S. Patent No. 4,346,442, was assigned to Merrill Lynch & Co. in New York.
- An automated securities trading system, U.S. Patent No. 4,674,044, was assigned to Merrill Lynch.
- An insurance investment program, U.S. Patent No. 4,642,768, was invented by Peter A. Roberts in New York.

Can't catch mice with it

From a legal standpoint, the MIS patents are unusual because they break the conventional wisdom that patents are for inventions such as better mousetraps and zippers, not for computer software or methods of doing business, Bender said at a recent meeting of the Computer Law Association.

The field has already spawned one dispute between competitors. Paine Webber, Inc. challenged the legality of Merrill Lynch's patent for a cash management system, arguing that patents cannot be applied to things such as business systems or services.

But a 1983 court opinion stated that Merrill Lynch's system was indeed patentable because it involved "a method of operation on a computer to effectuate a business activity," Bender reported.

The fact that the patents were obtained in the financial services industry is significant, according to Victor Janulaitis, chief executive officer at Positive Support Review, Inc., a Los Angeles-based management consulting firm.

"Because it's an industry that is in a state of revolution . . . the firms are coming up with new instruments and new ways of doing business," he said.

For example, Merrill Lynch's patented Cash Management Account combines a margin brokerage account, money market funds and a credit and checking account.

Jack Epstein, a vice-president at International Data Corp., a market research firm in Framingham, Mass., said the emergence of these patents highlights the need for MIS executives to develop competitive intelligence programs to find out which competitors are getting patents. "Otherwise, they may find themselves paying royalties to a competitor," he said.

Patent holders, on the other hand, will want to find out who might be violating their patents, Epstein noted.

The trend toward software patents was prompted by the 1981 U.S. Supreme Court ruling in *Diamond* v. *Diehr*, which opened the floodgates for patenting software-related inventions such as industrial process-control systems, digital telephone switches and robots, Bender said.

Software bugs

Lately, the patents have extended farther into the software field to include automated business processes and the user interface for computer systems.

For example, IBM has obtained at least 10 patents related to word processing software in the last two years and Hewlett-Packard Co. has a patent for its touch-screen interface, Bender said.

However, the software patents may be subject to court challenges because the field is so new and there are few legal precedents or journal articles on the subject. But Bender said that problem will be short-lived because there is an increasing flow of software patents that will stimulate more published material.

Bender noted that the patents have been issued to major players in the computer and financial industries, such as IBM and Merrill Lynch, which are not known for taking "way-out" or extreme positions. This fact gives legitimacy to the notion of obtaining software-related patents, he argued.

Out of the closet

Before the Supreme Court decision, when the patent office frowned on software patents, the patent applications were artfully crafted to downplay their software content, Bender said. Now, the applicants have come out of the closet and explicitly describe the software in flow charts, diagrams and lines of code, he said.

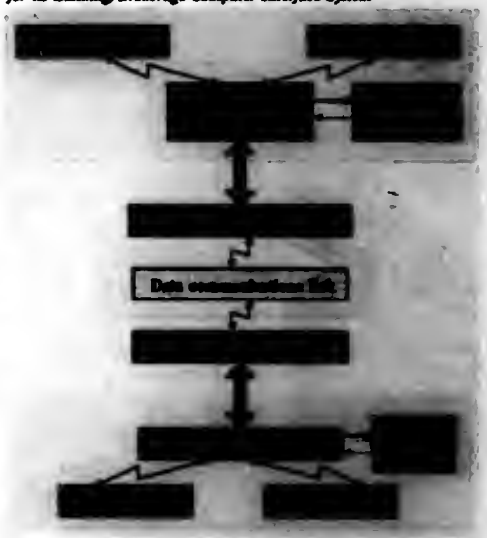
For example, the Royal Bank of Canada's patent has 107 pages of computer programming, including 10,000 Cobol instructions.

Ed Bougard, manager of personal lending services at the Royal Bank of Canada, confirmed that the patent was obtained in the interest of protecting a competitive advantage.

Bougard said the car loan program calculates a guaranteed residual value for the automobile — for example, $5,000 on a $15,000 automobile — and furthermore defers payment of that amount until the end of the loan term.

A patented approach

U.S. Patent No. 4,694,397 was granted last year to The Advest Group for its Banking/Brokerage Computer Interface System



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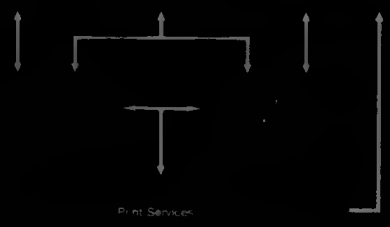

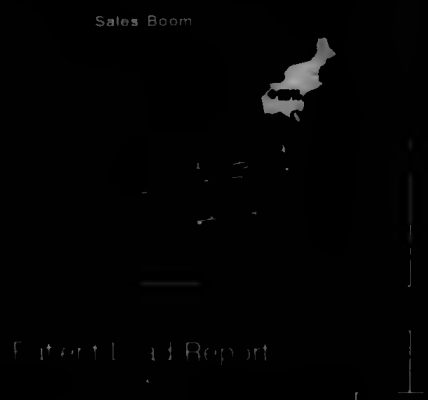

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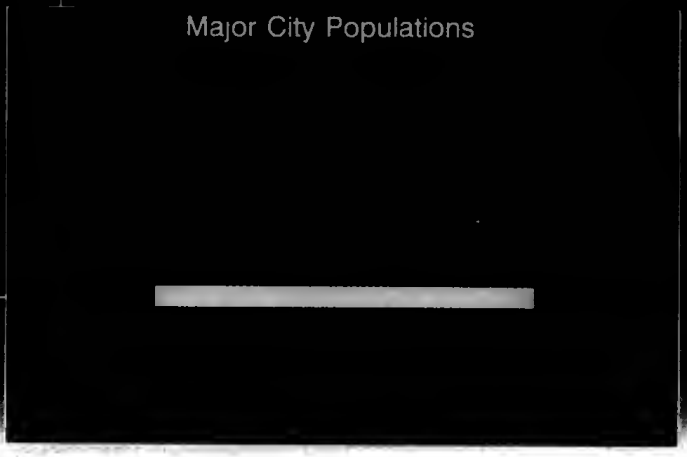

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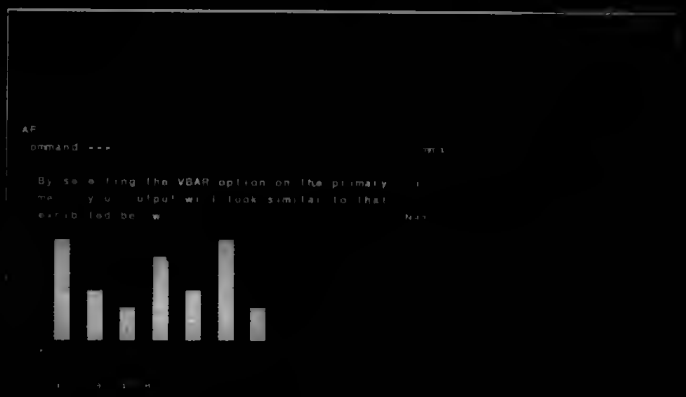

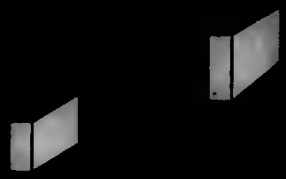

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IBM royalty bid casts high-end doubts

BY ALAN J. RYAN
CW STAFF

Larger systems vendors seem as much in the dark as clone vendors over the likely impact of IBM's demand for 1% royalties on sales of clones of its current and previous microcomputer lines. And IBM seems willing to keep it that way.

Minicomputer and mainframe vendors that were surveyed last week differed on whether their existing cross-licensing agreements with IBM on non-personal computer products will protect them from the royalty fees IBM is demanding from those it says duplicate its patented technologies.

As with the clone vendors, IBM last week was unwilling to provide the larger systems vendors with any type of blanket endorsement.

Unless the defined field of existing cross-licensing agreements includes products in the micro area, they are not immune from the royalty charges, IBM spokesman Michael Starks said.

Most of the major minicomputer and mainframe makers that also market IBM Personal Computer compatibles, including Hewlett-Packard Co., NCR Corp. and Data General Corp., admitted they have existing cross-licensing agreements with IBM on various computing technology levels. HP, NCR and DG would not comment on the nature of these agreements.

Not rattled

However, HP said it is not concerned. "We feel the IBM announcement doesn't have any impact on HP because of our cross-licensing agreements with IBM," company spokeswoman Mona Hayes said.

A source within NCR concurred. The company has various cross-licensing agreements with IBM and believes the royalty announcement will have no impact on it. However, "We're being very cautious," the source said.

Wang Laboratories, Inc. and Unisys Corp. were unable to comment on the issue at press time, although Unisys spokesman Wayne Adams said he is unsure whether the IBM royalty payments would affect Unisys, because the PCs it markets are OEM units.

Digital Equipment Corp. does not have any cross-licensing agreements with IBM, company spokeswoman Elizabeth Slattery said.

With the royalty announcement, analysts said IBM has clearly left the door open to go after PC clone vendors but will not likely do so until those vendors make requests to license patents on its Personal System/2 [CW, May 23]. At that time, companies that have technologies IBM is interested in may be able to strike cross-licensing agreements.

HP's Hayes said her firm will consider PS/2 compatibles "if and when there is a demand. We haven't seen that demand."

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DEC suit hits third parties

BY NELL MARGOLIS
CW STAFF

MAYNARD, Mass. — Digital Equipment Corp. last week won Round 1 in its legal battle with two small Massachusetts companies accused of defrauding the mighty minicomputer manufacturer.

On May 25, Middlesex County Superior Court issued temporary injunctions prohibiting Framingham-based Clinton Digital, Inc. and Hopkinton-based Sevco, Inc. from "selling, transferring, altering, destroying or otherwise disposing of" certain printed-circuit board modules or components for DEC's VAX 8650 computers, according to a DEC spokesman.

Earlier this month, DEC filed suit against Clinton and Sevco, charging both companies with fraud and deceptive trade practices and, in Clinton's case, breach of repair contracts.

According to the complaint and the account of DEC spokesman Jeffry Gibson, each of the defendant companies removed three gate-array logic chips from VAX 8650 boards, replacing them with considerably less valuable chips from VAX 8600s. According to the complaint, the companies then returned the boards to a DEC repair facility, alleging defects, and got functional 8650 boards — complete with three gate-array chips — as replacements.

"Visually speaking, the chips are pretty much the same," Gibson said. However, he added, "The 8650 module is a $39,000 item and the 8600 is a $17,000 item." He estimated DEC's loss at between $300,000 and $1 million.

DEC was alerted to the problem, Gibson said, when personnel at the repair center noticed an abnormal number of boards being sent in by the same firms.

In addition to barring the companies from tampering with specified VAX parts, the injunction "prevents [Clinton and Sevco] from destroying their records," Gibson said.

Neither Clinton nor Sevco could be reached for comment.

IBM eases chip-set licensing

Compatibility authorized, but cloners still patent-liable

BY JAMES A. MARTIN
CW STAFF

SAN JOSE, Calif. — Chips and Technologies, Inc. breathed a public sigh of relief last week with the announcement that it has reached an understanding with IBM in which it will not be required to license patents for its chip sets that provide compatibility with the Micro Channel architecture of IBM's Personal System/2 line.

Despite the apparent nod from IBM on chip-level compatibility, the announcement did nothing to alleviate industry confusion over patent demands that IBM may levy on vendors that use the chip sets to build PS/2 clones.

Chips and Technologies, which designs and manufactures IBM Personal Computer AT- and PS/2-compatible chip sets, does not currently have any patent licensing agreements with IBM, according to Linda Dezan, an IBM spokeswoman in Montvale, N.J. "They are not using any IBM patents, so they don't need a license," she said.

"The announcement was as expected — that Chips customers have no legal liability in buying chip sets from them," said Dan Kleaken, a technology analyst at Montgomery Securities in San Francisco. "There have been questions as to whether their chips needed licenses or not from IBM, so this clears away the cloud for potential users and investors in their stock."

PS/2-compatible makers that buy chip sets from Chips and Technologies might still be required to obtain licensing from IBM, according to that company.

"What Chips and Technologies is doing doesn't require an IBM patent," Dezan said. "Compatible makers don't necessarily infringe on patents, either. Each company designs and develops products in its own way. It's not known until a product is brought to market if it infringes on patents, unless they come forward in advance."

A compatible maker can supply IBM with information about its product before it is marketed, and IBM will "advise them on whether we think they will be infringing on our patents," Dezan said.

It makes more sense for IBM to go after the compatible makers than to bother pressing for royalties from a handful of chip makers, according to Howard Dicken, president of DM Data, Inc., a semiconductor research firm in Scottsdale, Ariz. In addition, the royalties paid on a microcomputer are going to be greater than those paid on a chip set, Dicken said.

By directly assessing the compatible makers a tariff on each machine sold, IBM will gain not only additional revenue but, more important, valuable market share information on each of its PS/2 competitors, explained Drew Peck, an analyst at Donaldson, Lufkin & Jenrette, Inc. in New York.

"IBM will know exactly where each compatible vendor stands in terms of machines sold," Peck said.

Microsoft takes Apple in Round 1

BY STEPHEN JONES
CW STAFF

SAN JOSE, Calif. — Microsoft Corp. has temporarily sidestepped questions as to its alleged infringement on the look and feel of the Macintosh by focusing initial arguments in its legal battle with Apple Computer, Inc. on the legitimacy of a 1985 contract between the two companies.

U.S. District Judge Robert Aguilar has granted Microsoft's motion to separate the trial into two phases. The issue of copyright infringement cannot be contested until Apple proves that Microsoft violated its 1985 licensing agreement, according to the decision.

Microsoft claims the 1985 agreement allows the developer to use elements of the Macintosh interface's "look and feel" in Windows 2.03. Apple, on the other hand, says Windows 2.03 is not included in the contract and claims it infringes on its copyright of Macintosh technology.

Aguilar ordered that all requests for documents relating to Windows 2.03's alleged copyright infringement be stopped until the current contract dispute is settled.

"Microsoft should not have to defend itself against copyright infringement charges if the allegedly violating work is covered under a licensing agreement," the judge's decision said.

Hewlett-Packard Co., which is a separate defendant in the Apple suit, could stand to gain from Microsoft's action. HP was named in the suit because it licensed Microsoft's Windows technology for use in its New Wave software.

If the court decides that Microsoft has not illegally copied the Mac, then HP's licensing of the Windows technology would also be considered legal, an HP representative said.

If Microsoft cannot prove that Windows 2.03 is covered in the 1985 agreement, then the trial would go to a second phase, in which the issue of copyright infringement would be argued.

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EDITORIAL

Making memories

THE VICE-PRESIDENT of technology planning at Merrill Lynch appropriately summed up the chip shortage situation in *Computerworld* last week: Customers, he said, are used to waiting months for personal computer memory expansion boards, but the recent 300% price increases "still amaze me."

To this point, the only noticeable reaction from chip makers of the well-publicized supply and demand imbalance for dynamic random-access memory chips is an almost comical recognition that yes, Virginia, this is a chip shortage.

Some U.S manufacturers have displayed the unmitigated gall to blame the Japanese for the current problem, claiming the Japanese are holding back on production. Of course, we should mention that these same people got an unwitting U.S. government to limit the Japanese ability to sell RAM chips here in the first place, which is really what the current shortage is all about to begin with.

But for anyone looking for an end to the current imbalance and restoration of fair market pricing — and that includes a lot of MIS managers — we have a suggestion: Don't hold your breath.

The fact of the matter is that there are precious few incentives for anyone to take definitive steps to ramp up production, including the Japanese. And the chip makers themselves are creating a set of expectations about chip demand that may be more of a self-fulfilling prophecy than a barometer of chip demand for the coming years.

At the fourth annual Semiconductor Forum held earlier this month, the consensus reached was that chip sales will plummet in 1989. That's a perfect reason *not* to invest one plug nickel in ramping up production.

But there's a better reason to maintain the current situation. At today's chip prices, semiconductor profits couldn't be better. Somehow, one gets the feeling that the semiconductor firms feel they are owed these profits as a result of the battering the companies took three years ago. At that time, they badly misread the marketplace and ended up with tremendous excess capacity.

When the market picked up later, U.S. vendors had scaled back so far that the door was left wide open for the Japanese to come in — which they did. To make a buck on underutilized plants, the prices of U.S.-made chips were pegged higher than the Japanese-made RAMs. The result was predictable, as was the cause of the situation — misreading the market once again.

At the Semiconductor Forum, the keynote address urged attendees to push for rational trade policies vis a vis the Asian chip makers. While they're at it, they might consider a course in Economics 101, where they can learn about the benefits to their customers and, ultimately, of unimpeded markets.

LETTERS TO THE EDITOR

Welcome change

Usually, I have to wait for Gopal Kapur's next gem, but now you have found another contributor who not only has his head in the open air but is literate and outspoken. I am referring to "Going the way of the whale" by Francis Walnut [CW, March 28].

Coming hard on the heels of the February report of the disaster at Bankamerica Corp. [CW, Feb.1] and a later multidisaster story, this article almost makes me believe that *Computerworld* remembers the working whales who knew your paper when.

On behalf of us whales, thanks for the fantastic article — and the respite from OS/2 and local-area networks.

Bill Hogarth
Systems Manager
Lakeside Information Systems Associates
Marion, Ill.

Don't forget us

I read with interest your coverage of Interface '88, particularly the story regarding Telenet Communications Corp.'s encryption features [CW, April 4]. I applaud Telenet for furthering its network security.

However, the article was misleading when the author stated that Telenet's encryption service "puts Telenet ahead of Tymnet, McDonnell Douglas Network Systems Co., which has no encryption features."

Tymnet, McDonnell Douglas does support data encryption — in fact, the Technical Communications Corp. encryptor, the same one Telenet now uses, was certified on our network more than 18 months ago. We have also certified several other data encryption devices for use on our network. Encryption devices have been used in both Tymnet's public and private networks for several years. The customer can either obtain an encryption device from a vendor or Tymnet will supply it.

Perhaps a more germane point is that we have offered our own form of encryption for 19 years. Tymnet's internal protocol multiplexes multiple users' data into packets, effectively scrambling the data that goes over the line and reassembling it only when it reaches its destination. We have found that this method has provided an effective form of network security.

Clint DeGabrielle
Vice-President of Marketing
Tymnet, McDonnell Douglas Network Systems Co.
San Jose, Calif.

This week in history

May 29, 1978
The House Subcommittee on Communications will introduce in Congress a rewritten version of the Communications Act of 1934. Although the subcommittee chief counsel was short on the bill's details, he did describe it as being deregulatory in nature.

May 30, 1983
Digital Equipment Corp. scraps a 2-year-old project to develop high-end upgrade systems for its Decsystem-10 and Decsystem-20 users in favor of a plan to tie those 36-bit computers into its 32-bit VAX-11 superminicomputer line.

Positive step

I am writing regarding the article about efforts to take Datapoint Corp. private [CW, April 11]. This "takeover" is part of a strategy to make Datapoint more flexible in responding to its customers' needs and become even more innovative with its product line. This is just one more positive step in Datapoint's progression to again become one of the premier suppliers of networking technologies. Four profitable quarters in a row and several product introductions is a good indicator that this strategy is working.

Joe McMonigle
Senior Sales Representative
Datapoint Corp.
San Antonio

Not the first

In "The doggonedest computer ever seen" [CW, March 21], Charles P. Lecht wrote of the originality of the Japanese in announcing K9. I guess he must not watch public broadcasts, because Dr. Who's faithful companion K9 made his debut years ago. In addition to most of the features of the Japanese K9, Dr. Who's K9 can also speak in various languages, has an excellent voice recognition system and has self-recharging batteries.

James P. Egan
President
Longboat Systems, Inc.
Dublin, N.H.

Computerworld welcomes comments from its readers. Letters may be edited for brevity and clarity and should be addressed to Bill Laberis, Editor, Computerworld, P.O. Box 9171, 375 Cochituate Road, Framingham, Mass. 01701.

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MIS managers must see themselves honestly

JACKIE REYNOLDS

First there was the shakeout of personal computer vendors. Then last year we saw the giants begin to cut back: IBM, Unisys and AT&T either laid off employees or offered strong retirement incentives.

The software market soon followed. Most recently, we've seen Management Science America significantly cut its work force, as well as Cullinet.

Only a few years ago, hardware and software companies and the MIS functions they supplied had the Midas touch. Even if everything didn't exactly turn to gold, most people believed that it did — or would with the next release.

Layers of management were added in MIS to accommodate the aspirations of the fast-track employees who wanted to have it all sooner, not later. Those who recommended a more thoughtful, conservative and efficient approach to using information systems were branded as naysayers and doomsdayers. Then, one not so bright day, some people saw their little patch of sky fall around them.

What caused the fall? Vaughan Merlyn, consultant and chairman of CASE Research Co. in Bellevue, Wash., recently cited the following statistics at the Atlanta chapter meeting of the Data Processing Management Association:

- Up to 25% of large projects (more than 60,000 lines of code) are canceled before completion.
- Up to 75% of all software projects are canceled.
- An average large system is delivered a year late and costs twice as much as the original estimate.
- A U.S. Army study of nine federal projects found 47% delivered but not used, 29% paid for but not delivered, 19% abandoned or reworked, 3% used after change and 2% used as delivered.

In what other industry would this sort of waste be tolerated? And why has it been accepted in information systems?

Beyond all the justifiable excuses, the industry has been guilty of intolerable arrogance and misrepresentation. Rather than bridge the communications gap with end users, MIS managers abdicated their responsibilities to the vendor or technician implementing the systems. We are now in the throes of the end user awakening with all the pain of the morning after.

What is an industry to do, now that it has been found out? MIS managers are going to have to seize the old bull by the horns and get down to serious business. The manager who endures this decade and the next will have to understand and practice "egoless management."

With no pride

Most of us have finally accepted that the programmer must give up his pride of authorship and submit to standardization. The manager will have to offer up pride of territory at the altar of efficient business practice.

In order to achieve efficiency, each manager will have to relentlessly evaluate his various responsibilities. He must be ruthless in making his unit of work the most efficient possible.

He must be knowledgeable about, and open to, the latest tools available and understand when they apply to his function. He also must understand when they are not applicable.

The MIS manager will need to know the business of his company inside and out. A manager recently told me he found out that many of the reports MIS had produced for years were of little use to his users. The ivory tower has crumbled, and the MIS manager must find his rightful place on the plant floor, figuring out what makes his business run efficiently.

Each manager needs to examine all positions beneath him. He must look at how time is spent and see whether there is significant production from the individual and from the position. In the past, idle chatterers and time wasters have been tolerated in the MIS department. They were, after all, creative individuals, and they had to be treated as such. No more: The geniuses of yesteryear will learn to work while they are at work.

Activities and paperwork should be reviewed for contribution to productivity. There should be fewer meetings, and fewer people should attend those that are held. Work will be done to achieve results, not to build egos.

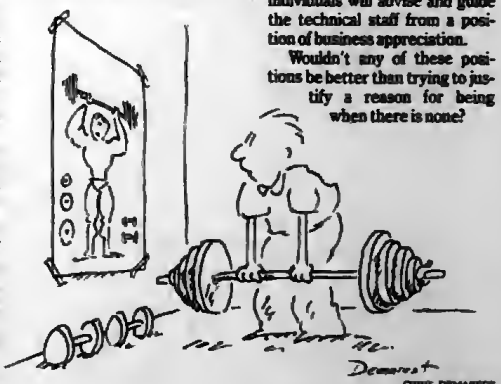
Similarly, MIS managers should review their own functions and consider themselves as candidates for cutback and downsizing. The day of empire-building is over. Managers who are slow to recognize this are targets for layoff.

Managers must also accept and promote the fact that their functions are often better done somewhere else. They should aggressively look for the most efficient points of automation and turn power and money over to the users.

And what will we do with all these MIS managers who work themselves right out of a job? There are at least two paths. The manager who has successfully done all of the above is in an excellent position to move into general management as an executive or more likely as an information specialist.

Those who still prefer the technical can get back to basics as business technicians. These individuals will advise and guide the technical staff from a position of business appreciation.

Wouldn't any of these positions be better than trying to justify a reason for being when there is none?



CHRIS DEMAREST

Reynolds is president and founder of DXI Corp., a consulting firm in Atlanta.

Why the argument over OSF?

It's a little unusual, it may not work, but it probably won't do much harm

ESTHER DYSON

The creation of the Open Software Foundation (OSF) has raised hackles and skepticism throughout the computer industry.

OSF is an alliance of seven hardware companies attempting to create an open standard based on AT&T's Unix. Unix, the group argues, is becoming closed, or proprietary, based on changes in the AT&T license agreement and the recent pact between that company and Sun Microsystems to create a binary Unix standard. In other words, now that AT&T is trying to wrest control of Unix from the marketplace, OSF is countering with a move to take control into its own hands.

Why the strong reactions from press and onlookers? For starters, it's a little unusual, to say the least, for John Akers of IBM and Ken Olsen of DEC to share a platform — especially one in favor of nonproprietary systems. Is this the same Olsen who told *Business Week* just days earlier (perhaps slightly out of context, to give him the benefit of the doubt) that standards are "snake oil" with all the appeal of "a Russian truck?"

Some people say the idea of open Unix is great but that they're not sure OSF will foster it; indeed, it impedes what looked like smooth sailing for AT&T and Sun. But the group is more an acknowledgment of schisms in the Unix world than the creator of such schisms. I see the foundation mostly as a hedging of bets: Let's stop it, but if it happens, let's be there.

Until AT&T moved to unify Unix by asserting control, there was no such thing as a standard. Now there's one firm proposal (the System V Interface Definition from AT&T and Sun) and one group that has agreed to work on one.

While the notion of open standards is philosophically and morally appealing, it does not make much business sense. The OSF companies aren't doing anything wicked; they're just trying to support their self-interest, much as Sun and AT&T are doing. What's new is the perception of how to achieve that self-interest — and an apparent switch in approach from vendors that, by and large, sell proprietary systems.

Why doesn't OSF make sense? It is attempting to turn a dynamic process — the creation, evolution and succession of standards — into something more fixed and controllable.

In the long run, neither side will win. OSF may bless others' products or even build its own, and AT&T may control the evolution of its version of Unix. But neither can force customers to buy products they don't want. Good products are inherently proprietary because they require investment and support; standards come after the fact. They cannot be established by fiat (not in this country, anyway).

In fact, the very notion of standards implies a fundamental contradiction, because standards are static in an unstable world. Like living things, they are destined to die when succeeding generations show up.

As many of the OSF members point out, they are not about to stop their own development efforts. Theoretically, they will license these efforts to competitors through OSF for resale to customers. But I have to wonder how willing any vendor will be to share a product that could confer a competitive advantage.

Business as usual

In the end, OSF is likely to become just one more outfit that endorses products — presumably in as nonpartisan a way as possible. (IBM's competition will take care of that, even though OSF's basic product is IBM's AIX). In fact, probably the best course for Sun and AT&T would be to join OSF — and then conduct business as usual. That's probably what its other members will do (albeit $13.5 million poorer). So far, AT&T has flatly refused to join, and Sun is considering the issue.

Why should a successful vendor sell products through OSF? Why is IBM donating AIX? For how long will these license agreements last, and how much of each product will they cover?

The point is that a single company, even a nonprofit one set up by a group of computing vendors temporarily working in concert, cannot hope to create standards. Or if it can, market forces dictate that it ought to be overthrown.

There is no reason that a committee should be any better at choosing, let alone creating, software than the best of a group of companies could be. That's right: The market lets a number of firms try and then selects the best one rather than determining from the start who should create the standard. To the extent that OSF is content to play the role of endorser rather than creator, fine. It becomes, then, just one more standards body.

In summary, OSF is exactly as serious as the industry and customers care to make it. And until it produces a product some 18 to 24 months from now, there's not much reason to take it too seriously.

That's not stopping anyone (AT&T, say) from doing anything. It's not (yet) selling anything, and it has pledged to support standards. Now who could argue with that?

Dyson is editor and publisher of "Release 1.0," a N.Y.-based leading computer industry newsletter focused on software and technology developments.

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SOFT TALK

Nell Margolis

Market savvy slippery goal

Back in the olden days — about two years ago — when Relational Technology and Oracle appeared not only to rule, but virtually to define the DEC VAX-based relational data base market, the California archrivals got tagged with iconic identities: Oracle had "great marketing" and Relational had "great technology."

It wasn't a case of good vs. bad, right vs. wrong, smart vs. dumb. Rather, like Luke Skywalker and Han Solo or Butch and Sundance, Oracle and Relational stood for alternative ways to be cool.

That lasted until Oracle got hot. The facts are so familiar that to recite them is to belabor them. Relational grew admirably; Oracle boomed spectacularly. Expectations were that Relational would catch up. It didn't. Expectations were that Oracle would slow down. It hasn't. And as the gap between the former gold dust twins grew, so did a perception that great marketing is better magic than great technology.

Therefore, it was no great surprise when Relational started talking about becoming a mar-

Continued on page 22

Unix users wary on compatibility

Express concern about necessity of new implementation by OSF

BY ROSEMARY HAMILTON
CW STAFF

Unix users last week raised concerns that plans to introduce an alternative, Unix-based operating system supported by major vendors will leave them with an incompatible operating environment.

IBM, Digital Equipment Corp. and the five other vendors that make up Open Software Foundation (OSF), however, promised a smooth migration to the new operating system, which is tentatively scheduled for release in 18 months.

The stated goal of the OSF, a nonprofit organization launched earlier this month, is to provide an open systems environment, although observers suggest the group's mission is to also take control of Unix away from AT&T.

The group plans to release its own implementation of Unix based on the yet-to-be announced AIX, IBM's version of Unix. OSF will build on the AIX core by adding such components as a user interface to create a complete operating environment, OSF members said.

"Nobody has really addressed migration yet," said Dean Allen, corporate vice-president of information services at Lockheed Corp.'s manufacturing unit in France. "I still don't know enough about where this thing is going, but I'm assuming that they'll provide some kind of migration."

However, Allen said his facility uses systems from DEC, Apollo Computer, Inc. and Sun Microsystems, Inc. Since Sun and AT&T are currently not part of

Continued on page 22

Report: Users to shape AI's future

BY NELL MARGOLIS
CW STAFF

Direction-setting power in the artificial intelligence market shifted from vendors to users in 1987, and the direction they set pushed AI concepts toward mainstream computing, according to "AI Trends '88" from DM Data, Inc.

Harvey P. Newquist III, editor of the Phoenix-based "AI Trends" newsletter, said the AI market is booming but traditional, "pure-play" AI firms are in danger of losing out to mainstream technology vendors.

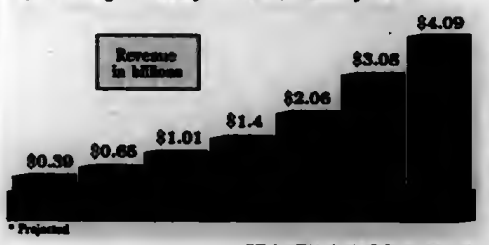
Characterizing 1987 as "the AI industry's most wrenching year ever," the report hangs out a laundry list of misfortunes that dogged "pure-play" AI companies between January 1987 and February 1988, prominently including layoffs, executive upheavals, bankruptcies and a sudden rash of litigation.

AI companies will have to turn to new sources of funding in the coming year, including debt and, more importantly, product sales. " 'Sell or die' is not too

Continued on page 23

AI takes off

Expert systems, AI languages and voice recognition will help fuel the artificial intelligence industry's ascent to $4 billion by 1990



INFORMATION PROVIDED BY DM DATA, INC.
CW CHART

Focus 6 to roll out in stages

BY CHARLES BABCOCK
CW STAFF

NEW YORK — Information Builders, Inc. will make new features of Focus Version 6 available in stages for its fourth-generation language, including an SQL Translator and the first production version of Focnet, a VAX-to-IBM mainframe link.

The staged release of new features is meant to supply Focus customers with added functionality without waiting for a complete set of features to be bundled into a new release, said Gerald Cohen, chairman of Information Builders.

The previous release, 5.5, contained 56 new features and took two years to go through coding, quality assurance and beta testing. The intermediate releases of Version 6 will receive full hot-line support from Information Builders, but they will only go to customers who request them. When all features can be bundled into a final Version 6, then it will be shipped all at once to the customer base,

Continued on page 23

Inside

- Informix releases Smartware under Xenix System V. Page 24.
- Infodata expands text manager functions. Page 24.

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Margolis

CONTINUED FROM PAGE 19

keting company.

Well, why the heck not, right? Cher turned into an Academy Award-winning actress, Sonny turned into the mayor of Palm Springs — why shouldn't Relational turn into a marketeer? No reason at all. The question is, Can they? Or, perhaps more accurately, Do they really want to?

And despite the company's protestations to the contrary, I have to believe the answer to that last one is a resounding no. Have to, because only an indomitable will to fail could explain how a firm so blessed with means — brains, talent and enough money to fund an impressive marketing initiative — could be so woefully ignorant when it comes to ways.

For instance, consider the following:

- When a company sends several key executives on the road for a major press tour to tout new products and strategies during its quiet period — the weeks immediately preceding a public offering when a company is under a Securities and Exchange Commission mandate not to draw public attention to itself, particularly with respect to any future plans — you've got to ask: Does this company really want to be a marketeer?
- When a company's president — chosen, according to the company, to spearhead an all-out attempt to reposition the company as a successful marketeer — spends the better part of an hour giving an "nverview" of the corporation to reporters who have been following it for years, leaving them to glean most of their information about new technology from lengthy, highly technical papers, you've got to ask: Does this company really want to become a marketeer?
- When a company — whose customers are overwhelmingly VAX users — benchmarks an eagerly awaited product on a Sequent platform because "that's where we could show really record-breaking numbers," *first* you remember the old grade school joke about the lady who's looking for a lost earring under a lamppost. The nice policeman asks her where she dropped it, and she tells him "Over there in the middle of the street." He says, "Hey, lady, if you lost the earring in the middle of the street, how come you're looking for it under the lamppost?" and she says, "Because here it's light enough for me to see what I'm doing." Then you've got to ask: Does this company really want to become a marketeer?

Last month, after a morning spent with Relational during which I learned, among other things, that a) benchmark numbers that constituted one of the high points of the company's immediate announcement had been audited by an outside expert, but b) the report hadn't been published yet and c) the auditor was out of the country for the next several weeks — as well as that d) Relational was about to become a marketing company — I called up a market analyst to chat.

"I'd rather not be quoted about this product at all," he said. He went on to sing me the same sad ballad that my editor and I had been torturing ourselves with all afternoon: I don't know what I saw, I don't know what's new and what's not, the hot stuff isn't verified and the verified stuff isn't here.

"My instinct tells me that this product is terrific, but I can't honestly back it up from what I was able to get from [Relational]," he concluded. "Who on earth gave you my name on this one?"

"Relational," I said.

"You're kidding," he said.

I wish, I thought. I asked him how he thought Relational was doing in its efforts to become a marketing company.

"You're kidding," he said.

I wish.

Relational is now several months and at least one major road tour into its "Marketing R Us" campaign. If anyone's convinced, the word hasn't drifted back here.

Maybe it's that being a marketeer is like being asleep: If you protest that you are, you reveal that you aren't.

Margolis is a *Computerworld* senior writer

Unretouched Screen Images

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Unix users

CONTINUED FROM PAGE 19

OSF, that could lead to an incompatible mix of operating systems at his facility, he said.

"Why do we need this?" Allen asked. "I think it's just throwing more confusion into this whole business."

OSF said that while the core will be an AIX implementation, the end result will not resemble the AIX that IBM offers today. With the launching of OSF, the group put forth a list of specifications, which it calls Level Zero, based on current or emerging industry standards such as the IEEE Posix specification and the X Windows system standard, on which user interfaces are built.

According to OSF, member companies are currently offering Unix implementations that either already comply with Level Zero specifications or are headed in that direction. The new operating system will be similar to the Unix implementations that are now marketed by members.

"It will be like any other rollover to a new operating system release," said John Doyle, chairman of the OSF board.

OSF has said its new operating system will include features to support current AT&T System V as well as the University of California at Berkeley's Unix 4.2 applications to provide a "clear and easy migration path." OSF has not yet specified what those features will be.

Focus

FROM PAGE 19

he said.

The SQL Translator will allow Focus customers to use ANSI-standard SQL queries against any file accessible by Focus, including Focus's relational data base management system, Cullinet Software, Inc.'s IDMS/R DBMS and traditional IBM file structures, such as IMS and VSAM.

The ANSI-standard SQL has also been extended with Focus formatting options for reports.

The new release will run above the 16M-byte, virtual memory line for the first full implementation of Focus under MVS/XA. It will be structured as a single re-entrant module, which allows multiple users to access a single Focus copy.

Version 6 will also offer support for cache memory, allowing part or all of a Focus data base to be loaded into memory during processing. The greater the use of cache memory, the fewer I/Os incurred as an application runs, Information Builders spokesmen said. When multiple data base access requests are run against the data in cache, additional performance gains are registered, they said.

Commit and Rollback operators have been added to the Focus transaction processing language, Modify. The Commit command specifies when a set of updates are to be executed, ensuring that I/Os are done only when required.

Version 6 will include the first phase of a production link from a VAX to a mainframe running MVS or VM/CMS. The VAX user works within Focus to run reports from mainframe files and data bases, spokesmen said.

In addition, Version 6 will provide a cross-machine interface between VM/CMS and IBM's DB2, using IBM's channel-to-channel adapter connecting VM and MVS systems.

AI future

FROM PAGE 19

harsh a slogan for 1988," the report said.

"Indeed," it stated, "the users of AI technologies — those who have the purchasing power, and thus affect the AI corporate bottom line — will now shape the AI industry's direction."

An estimated 70% to 80% of all hardware and software dollars are being spent in data processing and information services, the report said.

The pure AI companies are not just running out of alternatives; they are running out of time. The past year has seen a surge of mainstream vendors — Cullinet Software, Inc., Management Science America, Inc., Boole & Babbage, Inc., IBM, Digital Equipment Corp., Sun Microsystems, Inc., Apollo Computer, Inc. and, recently, Apple Computer, Inc. — come into an increasingly less esoteric AI market.

Some AI companies, Newquist said, reached out to the mainstream market in 1987, usually across IBM or personal computer platforms, and entered this year at or approaching profitability: Gold Hill Computers, Inc. in AI languages, Natural Language, Inc. in English-like interfaces and Aion Corp. in expert systems, to name a few.

However, Newquist pointed out, these companies and their ilk are in the minority; for the most part, the AI industry — defined in this report as encompassing expert systems, natural language, voice recognition, AI languages, AI hardware, neural networks and machine vision — has ignored, if not scorned, the DP/MIS market.

Whether or not we see a turnaround in this attitude, the report said, will determine whether the AI industry cashes in on the potentially multibillion dollar AI market or becomes a confederation of niche marketers.

Machine vision, expert systems and AI hardware, respectively, accounted for 20.8%, 19.5% and 48.8% of the overall AI market in 1987, according to figures compiled by DM Data. AI programming languages, a 3.2% slice of the AI pie, were put on the back burner this year. Neural networks grabbed the greatest mindshare in pure AI in 1987, spawning start-ups.

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A weather satellite in geosynchronous orbit above the Atlantic seaboard "sees" cloud cover even at night. The Geostationary Operational Environmental Satellite (GOES) H, built by Hughes Aircraft Company, sees through a combination telescope and sensing instrument called a visible-infrared spin scan radiometer atmospheric sounder (VAS). Developed by Hughes, the VAS uses reflected visible light and infrared thermal radiation to gather images of Earth and its atmosphere. The last in a series of five weather satellites, GOES H watches for storms that threaten the East coast.

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The first of a new generation of high-altitude reconnaissance systems has been installed in a U.S. Air Force TR-1 aircraft. The Advanced Synthetic Aperture Radar System-2 (ASARS-2) provides high-resolution radar ground maps in real time, in all types of weather. It produces long-range images superior to those delivered by photographic techniques. The unit's two side-looking antennas and the rest of the radar system, except for the cockpit displays, are mounted in a removable nose section. This allows the TR-1 aircraft's mission to be easily and rapidly changed by simply replacing the entire nose section. Hughes developed ASARS-2 for the U.S. Air Force.

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The Smart Software System for Xenix/386 costs $1,595.

Informix Software, 16011 College Blvd., Lenaxa, Kan. 66219. 913-492-3800.

An MRP II system specifically developed for large corporate users has been introduced by **ASA International, Ltd.**

Called **Max MRP**, the system is suited for large production manufacturing environments that require information on material, labor, scheduling and status. The full, closed-loop system is built on a Digital Equipment Corp. VAX hardware platform and is written entirely in Cobol. Max MRP is available as a turnkey system or a software-only configuration.

Max MRP costs from $100,000 to $350,000, depending on system configuration.

ASA, 1065 Hilladale Blvd., Foster City, Calif. 94404. 415-345-6000.

Applications packages

An enhanced version of **Infodata Systems, Inc.**'s text management software is now available. **Inquire/Text Release 87** reportedly expands the software's text-searching capabilities and offers increased performance while using fewer memory resources.

The package runs on IBM mainframes with the MVS and VS operating systems. It can be used in applications for litigation support, records management, legislation tracking and on-line documentation.

Inquire/Text Release 87 costs from $45,000.

Infodata Systems, Suite 700, 5205 Leesburg Pike, Falls Church, Va. 22041. 703-578-3430.

Signal Technology, Inc. has announced the **Interactive Laboratory System (ILS)** for Apollo Computer, Inc. Series 3000 and 4000 workstations. The product operates on digitized signal data stored in computer files and was designed for use in scientific and engineering applications that require analysis of time series data via digital signal processing techniques.

ILS operations include frequency analysis, digital filtering and numerical analysis.

ILS for Apollo workstations costs from $5,100 to $12,500.

Signal, 5951 Encina Road, Goleta, Calif. 93117. 800-235-5787.

Gary Brown Associates, Inc. has released **Payroll Management System/On-Line**, written specifically for the IBM System/36 in RPG II.

The package provides for federal, FICA and all 50 state tax jurisdictions, as well as local and disability where applicable. Employee wages can be assigned to the state where a designated job is performed or to the employee's home state. The system will accommodate various pay periods.

The Payroll Management System/On-Line costs $3,500.

Gary Brown Associates, 322-B Edwardia Drive, Greensboro, N.C. 27409. 800-422-3267.

Languages

Koala Development Corp. has released **Version 8.0 of the Add System**, a fourth-generation language RPG application report generator for the IBM System/34 and 36.

The system reportedly generates RPG source code and documentation for reports, on-line inquiries, bar graphs and file maintenance and batch programs. Roll keys have been added to inquiry programs.

The Add System costs $3,960.

Koala Development, Suite 101, 1700 Sunset Drive, Longwood, Fla. 32750. 407-330-1704.

Utilities

A system software utility developed for IBM System/36 minicomputers has been announced by **Sildensoftware**.

Called **Queueview/36**, the product reportedly gives users the power, speed and familiarity of IBM's Programmer and Operator Productivity Aid utility to view the spool file.

The utility is said to allow users to instantly browse and search any printer entry in the spool file, including IBM Displaywrite/36 and Virtual Printer files.

A one-time site license for Queueview/36 is $365.

Sildensoftware, 5007 Odessa Ave., Encino, Calif. 91436-1220. 818-789-1899.

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- Highly optimized generated code
- Use of standard IBM linkage conventions, with support for 31-bit addressing
- A CMS Rexx/TSO CLIST interface
- Support for signal handling including program checks and terminal interrupts, and non-standard signals such as timer interrupts and stack overflow
- Many built-in functions including string handling
- In-line assembler.

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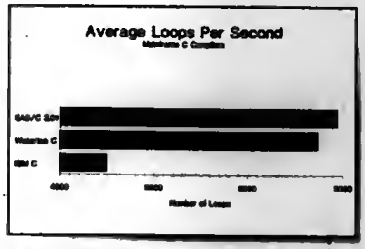

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Mail to: SAS Institute Inc., Attn: CC, SAS Circle, Box 8000, Cary, NC, USA, 27512-8000

MICRO BITS

Douglas Barney

A war of the 'soft' gods

It's gonna be just like Iran and Iraq! Microsoft chief Bill Gates' boyish looks hide a willingness to compete using whatever weapons are at the 32-year-old software prodigy's fingertips. Well, last week the scrappy Gates aimed a new weapon right at the head of Lotus.

First came the announcement of a money-back guarantee on Microsoft Excel for the IBM Personal Computer. The way the deal works is that Excel customers have until Jan. 1, 1990 to decide if they like Excel better than newer releases of 1-2-3. If, for any reason, a user doesn't like the way Excel performs, a full refund is issued.

That's pretty aggressive. But Microsoft got a lot cheekier. The firm then took out a two-page ad in *The Wall Street Journal* touting the guarantee and ranking on Lotus for making customers play the "Lotus 1-2-3 waiting game." But the coup de grace was when Microsoft delivered copies of The Journal to the hotel rooms of attendees of Lotus Week (a mini trade show for customers). The Journal wore a huge ribbon directing the

Continued on page 31

PC-Focus backs SQL

Enhanced tool offers 'universal' applications

BY ED SCANNELL
CW STAFF

ATLANTA — Information Builders, Inc. laid the strategic foundation for its microcomputer SQL strategy recently by unveiling the latest version of its fourth-generation language data base system.

Christened PC-Focus 4.0, the program features expanded import-export capabilities and what-you-see-is-what-you-get report-painting features.

The company's SQL strategy centers on offering the product as a "universal" application development and decision support tool, no matter which relational data base engine is running underneath it, according to David Feldstein, vice-president of the company's Micro Products Division.

"When it comes to SQL-based products on the PC, the talk currently outweighs the reality by a large factor," Feldstein said. "However, we recognize that SQL offers a common access method to relational DBMS products on the mainframe and minicomputer level."

SQL translation

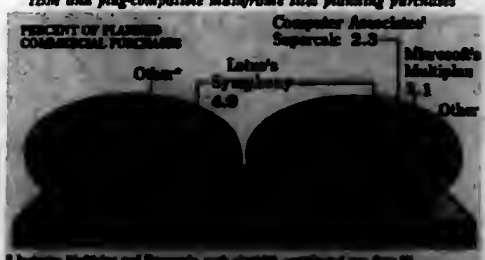
By supporting SQL syntax directly, users can interactively type SQL statements into PC-Focus to query PC-Focus files, a spokesman said. The new version of the program supports ANSI-standard syntax for queries and file joins and will translate SQL statements into Focus

Continued on page 30

Data View

Lotus's 1-2-3 retains big-shop lead

Other PC spreadsheets fail to unseat 1-2-3's stranglehold on IBM and plug-compatible mainframe sites planning purchases



INFORMATION PROVIDED BY FOCUS RESEARCH SYSTEMS, INC.
CW CHART

Supercalc 5 to compete for users' attention

BY ALAN J. RYAN
CW STAFF

SAN JOSE, Calif. — Computer Associates International, Inc. will thrust another dagger into the spreadsheet wars when it announces Supercalc 5 next month. The biggest challenge, however, will be getting corporate users to sit up and notice it.

Computer Associates has planned a heavy advertising and marketing schedule to try to establish a larger beachhead in the microcomputer spreadsheet battlefield dominated by Lotus Development Corp.'s 1-2-3, company sources said. Supercalc 5 is scheduled to be announced at PC Expo on June 20.

While Computer Associates' products have traditionally been more entrenched in corporate site licensing and mainframe environments, the company will try to focus more strongly on retail sales, the sources said.

Trying to be No. 1

Supercalc 5 is fully compatible with 1-2-3 and is able to import .WKS and .WK1 files and 1-2-3 macros, the sources said. The product's June announcement and third-quarter shipping date are in response to Lotus's announced delay in shipping 1-2-3 Release 3, they said. The product has been in the works for nine to 12 months.

Other enhancements include the ability to view three spreadsheets simultaneously and expanded cell references supporting edit and copy across spreadsheets. Using data links, users will reportedly be able to retrieve information quickly from other cells with similar names or numeric codes.

Supercalc 5 includes enhanced presentation-quality graphics, built-in auditing and macro debugging and enhanced macro capabilities such as macro sheets and error handling within macros. Users will be able to toggle on and off for minimal recalculation and can also specify ranges to be recalculated, the sources said.

The updated program includes an Undo feature to reverse unwanted commands or data entries and offers a data path to search directly for spreadsheet files.

The Computer Associates spreadsheet, unlike competitors such as Borland International's Quattro, is not graphics-based.

Supercalc 5, which supports the older versions of Supercalc, will likely remain at the $495 price of Supercalc 4, the sources said. An OS/2 version is expected by the first of the year, company sources said.

Inside

- Viruses terrorize PCs nationwide. Page 29.
- SAS System: Users call it a DBMS and an organizational tool. Page 29.
- Datavue rolls out 4086-byte Spark laptop. Page 32.

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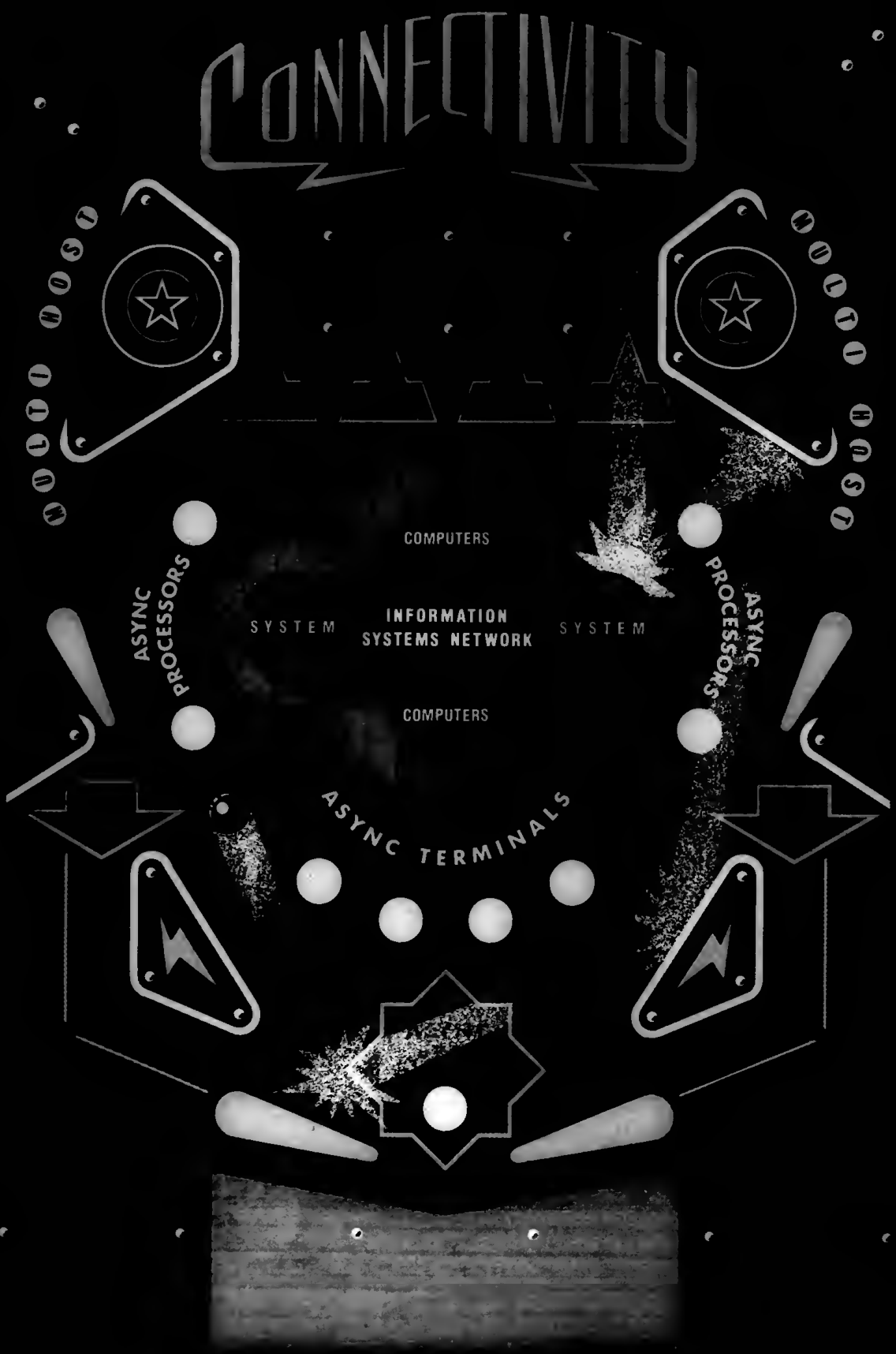
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There's only one way to protect yourself: keep up with today's demands on your 3270-compatible system while you invest in a trouble-free future.

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Protect your investment while preparing for the future.

The AT&T 6500 Multifunction Communication System does for data communications what a PBX does for voice: it helps you move closer to creating a single, highly productive data network that lets your equipment – and your company's workgroups – run at peak efficiency.

With the AT&T 6500 System you can instantly transfer data between windows, thereby transferring data between sessions or hosts. By eliminating the communications "Tower of Babel," the 6500 System lets users concentrate on the tasks that really matter.

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- IBM[1]3270 plug compatibility.
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6500 SYSTEM DISPLAY

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- Cable and wiring flexibility. Host devices can be connected to the 6500 System through inexpensive twisted-pair wiring – or you can use coax.

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Computer technology is changing every day. And tomorrow's corporate workgroups will be even more diverse and decentralized. Forward-thinking MIS managers can protect their investments and plan for the future with the AT&T 6500 Multifunction Communication System. Its flexibility, transparency, and expandability will prepare you for anything the future has to offer.

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Boole & Babbage, Inc., 510 Oakmead Parkway, Sunnyvale, California 94086.

Boole & Babbage

The Performance People

SMALL TALK

Ed Scannell

What's in, out at IBM

IBM steps into the fast lane. It's good to see IBM getting more aggressive. If it turns out to be true — and we think it is — IBM will announce a 25-MHz Intel 80386-based system this week that it will tout as the fastest system on the market. No one can be sure of the system's price until it is announced, but priced reasonably, it should give many corporate accounts pause for thought before they buy more Compaq Deskpro 386/20s.

IBM is also introducing an upgraded Personal System/2 Model 50, but that's bound to get lost in the long shadow of the Model 70.

What is almost as interesting is what IBM won't announce June 2. Several analysts, dealers and corporate accounts have been telling us for the last couple of weeks that IBM had briefed them on several other processors scheduled to make an appearance on that date but now won't. Reportedly, IBM was thinking of introducing Intel 80286-based PS/2 Model 25s and 30s, the former an 8-MHz one-wait state machine and the latter a 10-MHz zero-wait state machine. The company also briefed some folks on a higher

Continued on page 30

Viruses infect corporate MIS

Hundreds of thousands of cases of PC plague could be possible in U.S.

BY ALAN J. RYAN
CW STAFF

"Greetings from Sunnyvale" sounds like another tacky postcard, but if it appears on your computer screen, beware.

The Sunnyvale, Calif., virus is one of many personal computer viruses currently plaguing data administrators nationwide, and it is a nasty one. The majority of viruses, however, tend to be irritating rather than destructive.

Like a disease, a virus gets into the computer when an infected disk is used to boot the system. Each future disk introduced to the infected system will pick up the virus and can pass it along to other systems.

"It's almost like terrorism," said Jim Maginnis, systems manager at Breault Research Organization in Tucson, Ariz. "We have not located the [Sunnyvale] virus, but have located plenty of code designed for destruction."

Maginnis said his company, which provides engineering workstations for defense contractors, discovered the virus March 5. Since then, the firm has consumed two to three man-months fighting it. He also lost most of his floppies and had to spend approximately $1,000 to replace contaminated software.

But the biggest expense, he said, will come in the future, because the company will have to adjust its computer operations to a completely different set of policies and procedures.

'I'm immune'

Once considered something that "could never happen to me," viruses are popping up everywhere, from the open computer labs of colleges to specialized government agencies, corporations and homes. And they are traveling around the globe, with names like the Jerusalem Virus and the Pakistani Virus.

Companies that make software to fight viruses say it is impossible to say how widespread the problem is in the U.S., but they believe it could range into the hundreds of thousands of cases. Once a virus attacks a location, it may latch on to every system in the building and remain undetected for weeks or months. "We've got one company with 1,000 affected users," said John McAfee, president of Interpath Corp. in Santa Clara, Calif., which distributes an antiviral product called C-4.

Don Parker, a senior management consultant and computer security expert at SRI International in Menlo Park, Calif., said most viruses are not meant to cause harm. Most people who might create a virus as a means of revenge or sabotage could find easier methods of doing so than writing the virus code, he said.

Some skeptics speculate that companies marketing antiviral products are creating virus hysteria to boost sales; others say the media is making much ado about nothing. Either way, corporate MIS directors are concerned.

A group within the MIS department at Metropolitan Life Insurance Co. in New York is constantly looking at the area of security, including viruses, said Dan Cavanagh, a senior vice-president at Metropolitan. "We always have warnings out for our PC users, warning them about free software and the dangers of using bulletin boards," he said.

At Polaroid Corp. in Cambridge, Mass., information technology manager Peter Duray said he has always kept his eyes open for the "Trojan horse" viruses in the mainframe and minicomputer sectors "so we don't install software from vendors we're not familiar with. Now we're becoming more concerned about them in the personal computer world."

Some viruses are time bombs that will flash a message on a particular day and time or, worse, might scramble the index on a hard disk or consume data.

Companies and individuals often spend hours looking for viruses and ways to get rid of them. The authors of the mischievous and sometimes destructive code usually remain anonymous.

Long-distance affair

Peter Scheidler, a systems engineer at the Providence Journal Co. in Providence, R.I., discovered in early May that the PCs used for the newspaper's editorial operations had been infected with the Pakistani Virus.

Oddly, once Scheidler isolated the virus, he found three phone numbers listed in the header field. He dialed one and spoke with the virus's author in Lahore, Pakistan.

The originator of the infection told Scheidler he had written it to see if people were stealing his software. *The Providence Journal* has no software from Pakistan, Scheidler said. The author claimed to have only one copy of the virus and said he had no idea how it had traveled around the world.

Scheidler was lucky, though. The Pakistani Virus infected some 50 of his 350 PCs, 12 or more systems disks and approximately 100 personal disks. Just one disk was lost, but the engineer said he was unsure whether the virus was to blame. "We don't know what it does, and we haven't let it run its course. We have it under control now," he said.

According to Interpath's McAfee, Scheidler and Maginnis are not alone. But, he said, viruses can be avoided.

"We get 50 calls a day from people who are drowning in viruses," he said. But virus detectors cannot rid a computer of a virus; they only warn the user that a virus is trying to get in to the system.

"People have to be told that this can be avoided. The hell with buying antivirals — just stop booting with strange diskettes, or only use one diskette to boot the system," McAfee said.

Learning the hard way

At Bowie State College in Bowie, Md., another strain of the Pakistani virus reared its head in mid-May; rather than affecting only software, it attacked hard disks as well.

After students lost data in their hard disks three times within one week, David Waters, Bowie's director of academic computing services, decided to investigate. Using the Norton Utilities, he was able to find the "Copyright Brain" trademark of the Pakistani Virus at Sector 0 on the hard disk.

"About 98% of the software we investigated was infected, and two out of four hard disks," Waters said. "We cleaned up all

Continued on page 31

SOFT TIPS

1-2-3 helper

Lotus Development Corp.'s 1-2-3 and Symphony should be used on a network in the following manner only. The hidden files from these packages *should not* be loaded on to a network file server. Users should not use the COPY-ON, COPYHARD or INSTALL procedures to transfer the copy-protected files to the file server. Those procedures are to be used on DOS devices only.

If you want to use 1-2-3 or Symphony on a network, copy the program files to the server using the DOS COPY command. Then, all users must have their own copies of the package and can access the program by using the Key Disk in the A drive.

If users have different monitors or printers, separate driver sets can be created for each person. These products do not have a network version and, therefore, do not have network features such as file locking. If two users access the same work sheet file and make changes, the person who saves last will save over the other user's changes.

Information provided by Corporate Software, Inc., a Westwood, Mass-based software reseller.

Suite slow but good

BY JULIE PITTA
CW STAFF

CARY, N.C. — SAS Institute, Inc.'s SAS System, a suite of software packages for data management, analysis and presentation, has found acceptance among users who need to organize large blocks of statistics.

Users appear pleased with the product's capabilities but said the software can be slow on less powerful personal computers and consumes a great deal of disk space.

Juanita Allison, a scientific programmer at PPG Industries, Inc., which manufactures glass as well as paint and other coatings for automobiles, said the SAS System is being used to record experiment results. PCs running the SAS System are connected to an IBM mainframe.

"We're using it for data analysis in the development of new products," she said.

SAS System

Price: $495 for Base SAS
$395 for modules other than SAS/IML, SAS/RTERM

- Supports IBM PC AT, XT, 3270 PC, PS/2 and compatibles

Requirements:
- 640K bytes memory
- 20M-byte hard disk drive
- Three expansion slots

Other users have also purchased the SAS System to organize large amounts of statistical data. David Owen, a system analyst for the Fairfax County Health Department in Virginia, said his office is using the SAS System as a data base manager.

"It's not sold as a data base management system, but it works wonderfully as that," Owen said. The health department is using the product to record medical and environmental data like septic systems, well water and air conditions.

Last December, SAS Institute enhanced its SAS System to add SAS/Graph, a data and presentation graphics tool; SAS/FSP, a word processing system; and SAS/AF, an interactive applications development tool for building front-end menus, computer-aided training and on-line Help systems. The prior version included Base SAS, a data management and report writing program; SAS/STAT, a statistical package; and SAS/IML, an interactive matrix feature for mathematical, engineering and statistical problems.

Price for Base SAS is $495 for a first-time single-user license. Modules are priced at $395 for first-time users, except for SAS/IML and SAS/RTERM, which are priced at $345.

Users bite into Applelink

BY JULIE PITTA
CW STAFF

CUPERTINO, CALIF. — Apple Computer, Inc. this week extends its 24-hour Applelink information network to end users.

Established in 1985, the Applelink network was originally restricted to Apple sales personnel and authorized dealers. It later encompassed large corporate accounts serviced directly by Apple and by value-added resellers. Apple customers subscribing to the service would receive information regarding products and pricing, and answers to technical questions.

Applelink Personal Edition will cost users $35 for a year's subscription, which includes software, a user manual and "Applelink Update," a monthly publication detailing upcoming network attractions. Network time will cost an additional $15 per hour during "prime time" and $6 hourly during other hours.

Applelink will be initially available for the Apple II personal computer. A version for the Macintosh is scheduled for availability this year through Apple dealers.

The product, co-developed by Apple third-party developer Quantum Computer Services, Inc. in Vienna, Va., will be formally introduced at the Apple Fest show held last week in Boston.

Half of the network is devoted to Apple news, including product and other special interest forums, listings of Apple products and pricing and demonstration versions of third-party software. Additionally, "Apple University," one of the features of Applelink, will offer courses on subjects such as programming in Basic and using Appleworks. The courses will offer real-time classrooms.

PC-Focus

CONTINUED FROM PAGE 25

code and execute the request.

Version 4.0's import-export facilities automatically convert Ashton-Tate Corp. Dbase III, and, when available, Dbase IV, Ansa Software's Paradox, Microrim's R:Base and all Lotus Development Corp. 1-2-3 file formats into PC-Focus files. The company expects to offer support for environments in which multiple data base products reside in the future, Feldstein said.

The Forms Painter offers a full-screen interface to the program's reporting language that should shorten the development time of free-form data base reports, Feldstein said.

Forms Painter will support movable data base fields and free-form text, and users will be able to add fields to a report by choosing them from a pop-up menu. The fields can then be moved to any location on screen and combined with any free text to create more specialized forms such as invoices and checks, a spokesman said.

PC-Focus 4.0 will be available in the fourth quarter and will carry a suggested retail price of $1,295, the vendor said. Users who have purchased the Extended Maintenance and Service Agreement will receive PC-Focus free of charge.

Scannell

CONTINUED FROM PAGE 29

megahertz Model 60 and a 25-MHz Model 80 that could hold up to 300M bytes and would cost $9,995. The company was also going to hold back again on introducing its long-awaited laptops, in part because of the recent Zenith laptop announcements that have some aggressive price-performance values.

Rumorologists say IBM was also considering introducing the P-9 chip — a 32-bit chip that plugs into a 16-bit socket — in a system, but likewise has decided, for reasons unknown, to hold off until a later date.

It's been in the wind that IBM would unveil DOS 3.4 June 2 that would feature an easier to use file system, support for extended memory and pull-down menus. In connection with this announcement, IBM reportedly would introduce some extended memory boards.

A couple of sources also told us that all systems using the 80286 and lower, including the P-9, would now be developed in Austin, Texas, and all 80386-based development would be done in Boca Raton, Fla. Sources called the Austin group the "clone-killer division."

In other IBM gossip, word from an executive at one of the major chip makers is that IBM is a bit behind in developing the intelligent subsystems that are going to show us all why we should believe in the Micro Channel. Our source says not to expect anything until late this year and maybe not even until early next year, which would be disappointing. A few sources speculated that with the release of OS/2 Extended Edition in July, IBM would introduce a graphics or communications subsystem that would go hand-in-glove with OS/2 Extended.

Quote of the week. "I suppose it's our version of 'The check's in the E-mail.' " — Lotus Chairman and Chief Executive Officer Jim Manzi at the company's annual meeting, suggesting that the delayed 1-2-3 Release 3.0 may be late but it would be well worth the wait.

Scannell is a *Computerworld* senior editor, microcomputing.

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When IBM design engineers need a workstation to design the future, they turn to the IBM RT™ system for developing everything from circuits to software.

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Data Base
Oracle, * Ingres
Microprocessor
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Barney

CONTINUED FROM PAGE 25

Lotus customer to the gem of an ad within.

One motive for these actions is increasing market share. But another may be that Lotus refused to allow Microsoft Excel folks to sit in on certain Lotus sessions for developers, which provided insight into product plans.

We wonder if Microsoft will refund the money for the Intel 80286 processor, the high-end graphics adapter and monitor, extra memory and the mouse needed to efficiently run Excel. For spreadsheet guru Jack McGrath, those costs reached $2,500.

But Lotus is rubber and Microsoft is glue. At least that seemed to be the sentiment when this reporter asked Lotus Chairman Jim Manzi what he thought of the Microsoft ad. "I thought it was two pages and cost about $128,000," the Lotus chief said. Manzi went on to lambaste Microsoft for violating one of the key tenets of Marketing 101 — do not discuss competitors.

An advantage in the summer? It looks like Ashton-Tate is trying to gather steam in the still-profitable word processing software market. The firm, which acquired market-leader Multimate only to see its slice of the pie cut, hopes for a boost with a summer beta test of Multimate Advantage III. Ashton-Tate's goal is the same as other word processor vendors' — to add features that eliminate the need for separate desktop publishing packages. I wonder if it's worried about getting rid of the need for Byline, Ashton-Tate's desktop publishing software.

Towering Japanese? According to a particularly knowledgeable and prolific source, Toshiba has big plans for the U.S. micro market, despite the brouhaha over submarine parts and a certain Communist superpower. The firm, which sells a microcomputer in its Japanese homeland, is apparently planning a fourth-quarter U.S push for the product.

Original spreadsheet wiz pitches in on Release 3.0. Bob Frankston, best known as co-author of the original Visicalc, has been kicking around on a number of projects at Lotus, acting as a sort of ad hoc technologist with a bit of a focus on electronic mail. But when the times got tough for 1-2-3 Release 3.0, Lotus turned to one of the hardest of the hard core. While it is not a full-time role, Frankston is working with old Software Arts crony David Reed to tighten up Release 3.0 code and get that baby to market by year's end. Given that Frankston wrote a good half of what used to be the best spreadsheet on the market, his input may be just the ticket.

We'll get back to you on that! Lotus's a compact disk/read-only memory products, while growing in revenue, have not taken over the world. But the firm's One Source information systems may help the Soviet Union take over the world. Tass, the Soviet news agency, recently contacted Lotus looking to buy the product, which provides a variety of financial and news information. The only stumbling block is Lotus's legally clearing the sale with our government.

And we haven't even announced these. Lotus has got a few products up its sleeve that in pre-Frank King (the Lotus official with a beef against preannouncements) days would have been announced by now. An IBM OS/2 version of the Express E-mail package is up and running, a new Manuscript word processor looks primed for announcement next month, and a new Freelance Plus is also ready to roll. It ain't Release 3.0, but we'll take what we can get.

Barney is a *Computerworld* senior editor, microcomputing.

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IBM The Bigger Picture

Viruses

CONTINUED FROM PAGE 29

the disks in the computer room, but the students had data disks that were infected, so one day later, our disks were infected again," Waters said.

Now, Waters said, he will have to set up an inspection for all floppies that come into the computer room.

A similar virus has been discovered at the computer lab at the College of Alameda in California, which is set up for all students on campus to use. The Alameda problem differs from the Pakistani Virus in that its code embodies a counter, which possibly keeps track of how many times the virus has copied itself. According to Aziz East, the computer lab's manager, it is possible the virus's author checks in from time to time to see how many generations have been spawned.

In mid-May, East's workers were still trying to disassemble the code.

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NEW PRODUCTS

Systems

Datavue Corp. has introduced a 40M-byte hard-disk version of its Spark laptop computer.

The Intel Corp. 80C88-compatible hard-disk model is said to have a 25-msec access time and will be offered with 640K bytes and one 3½-in. 720K-byte drive. The system has a supertwist electroluminescent backlit screen, and options include a modem and a math coprocessor. Current Spark floppy-drive owners will be able to upgrade to the hard-drive version for $1,249.

The Datavue Spark with 40M-byte hard drive costs $2,499.

Datavue, One Meca Way, Norcross, Ga. 30093. 404-564-5668.

Software applications packages

Encode, Inc. has announced **Autocam**, graphical part-programming software designed for use with Autodesk, Inc.'s Autocad program.

The product offers several graphical features designed to simplify the part-programming process for the metal working industry. Pull-down menus, dialogue boxes and tables of information provide access to parts description, set-up specifications and tool-path functions.

Autocam costs $6,000.

Encode, 12 Cotton Road, Nashua, N.H. 03063. 603-882-4666.

Layered, Inc. has introduced an inventory module for its Insight Expert Accounting series. For Apple Computer, Inc. Macintosh computers, **Insight Expert Inventory** offers an inventory control system especially suited for small and medium-size businesses.

The product is said to allow managers to perform aging analyses of inventories and create item lists, item valuation, stock status and trial balance reports.

Insight Expert Inventory costs $695.

Layered, The Schrafft Center, 529 Main St., Boston, Mass. 02129. 617-242-7700.

Palisade Corp., formerly Tempus Development Corp., has announced **Risk**, a Lotus Development Corp. 1-2-3 add-on for risk analysis and simulation modeling. The product uses probability distributions and simulation techniques to evaluate uncertain spreadsheet models.

Risk reportedly allows 1-2-3 users to define uncertain cell values in a spreadsheet using functions. The package provides 30 additional functions to the 1-2-3 function set, each of which allows the specification of a different type of probability distribution. Risk requires 50K bytes in memory when resident with 1-2-3 and a graphics adapter card. Additional memory is not required during simulations.

Risk costs $395.

Palisade, 2189 Elmira Road, Newfield, N.Y. 14867. 607-564-9993.

Data storage

Irwin Magnetic Systems, Inc. has introduced several tape backup systems for the IBM Personal Computer, Personal System/2 and the Apple Computer, Inc. Macintosh markets.

The **Model 5080** is an external, self-powered, small computer systems interface (SCSI) minicartridge tape backup system designed for Macintosh computers.

The Model 5080, including software, SCSI interface and 256K bytes of cache memory, costs $1,395.

The **6150 series** ¼-in. tape backup systems are said to include error correction capabilities and visual software. The 150M-byte systems were designed for supermicrocomputer, workstation and minicomputer users.

The 6150 series costs from $1,295 to $2,295, depending on configuration.

Irwin Magnetic Systems, 2101 Commonwealth Blvd., Ann Arbor, Mich. 48105. 313-996-3300.

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DATA STREAM

Kathy Chin Leong

ENE: It's only a demo

A word to the wise: Map out your plans before pursuing MAP.

If you are a factory networking aficionado, chances are you already made airline reservations to hit Baltimore on June 6.

That's when the MAP/TOP Users Group and the Corporation for Open Systems plan to make networking history at the — drumroll, please — Enterprise Networking Event (ENE).

Don't worry about bringing your pink slip and checkbook, because many of the products won't be on the market for at least another six months. Just keep repeating to yourself: It's only a demonstration, it's only a demonstration.

For the uninitiated, the focus of the ENE will be on a ficticious factory that manufactures pencil and business-card holders. Hence, some 50 vendors will link computers and assembly gadgetry together to show how each phase of the manufacturing process can use Manufacturing Automation Protocol/Technical and Office Protocol (MAP/TOP). A backbone broadband MAP IEEE 802.4 network and a backbone baseband TOP IEEE 802.3 network will highlight the show.

I am sure this product parade will be significant. It will be one of the few times you find competitors such as Hewlett-Packard, DEC, IBM and Sun

Continued on page 34

Telecom users get new message

ICA urges communications execs to control change in complicated era

BY KATHY CHIN LEONG
CW STAFF

ANAHEIM, Calif. — Four years after the breakup of Ma Bell, communications managers' lives are more complicated than ever. But the message issued to the approximately 2,000 communications directors gathered here at a recent trade show was clear: Take hold of the problems in communications; do not let the problems get a hold of you.

That theme was echoed by numerous guest speakers at the 41st International Communications Association (ICA) conference.

"Have passion in leadership," urged Mike Vance, a management consultant at Mike Vance Design in Cleveland. "Set standards and do not compromise. Don't let mistakes happen."

Peter Keene, author of *Competing in Time*, compared the nature of a telecommunications manager's job with a person trying to change a tire on a moving car. "It is difficult, but the benefit of being in communications [is that it] gives you the chance to create big business opportunities for your company."

In financial services, manufacturing, distribution, airlines and publishing, superb communications services are critical to keeping an organization alive, Keene added.

In too many cases, users are constantly reacting to problems, Keene said. "Control change, don't just manage it," he charged. "Technology can give you a competitive advantage as well as an organizational advantage."

As the year 2000 approaches, the regulatory environment, the business world and the technology base will all be decidedly different, he noted. "Set forth a vision and carry the company with you," he said. "Look out on the horizon and get ready for it."

A captivated audience listened intently to Keene's admonitions before heading out to seminars designed to turn them into better technology managers. This year's group of workshops featured topics such as "Managing a Telecommunications Department," "Overcoming Resistance to Change" and "Managing Network Architecture and Technology."

On the lighter side

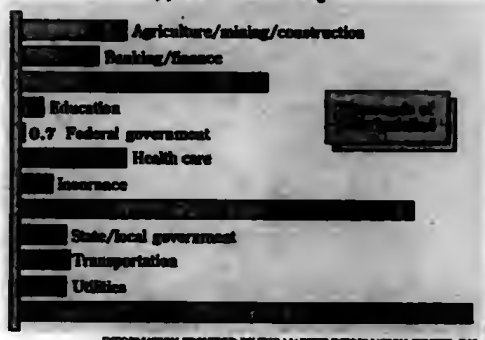
Out on the show floor, vendors entertained booth attendees. Infotron Systems Corp. amused users with U.S. Olympic champion Peter Vidmar, who performed exercises on a pommel horse. Contel Corp. kept attendees happy with an evening of entertainment featuring Bob Hope

Continued on page 34

Data View

PBXs for sales

The wholesale and retail market is the biggest customer of private branch exchanges



INFORMATION PROVIDED BY THE MARKET INFORMATION CENTER, INC.
CW CHART

TCP/IP cost mark broken

BY PATRICIA KEEFE
CW STAFF

OXNARD, Calif. — Network Research Corp. recently introduced a turnkey Transmission Control Protocol/Internet Protocol (TCP/IP)-based networking product that it claims is the first to break the $500 price barrier on TCP/IP products.

Network Research said the bundled offering, Fusion, will sell for $495 when it becomes available next month.

Fusion includes the latest release of Network Research's Fu-

Continued on page 35

Excelan's OSI plans skimpy

BY KATHY CHIN LEONG
CW STAFF

SAN JOSE, Calif. — Excelan, Inc. last week sketched out plans to develop products based on the Open Systems Interconnect (OSI) and Xerox Network Systems (XNS) protocols for its user base.

Once executed, the strategy could serve to expand Excelan's network technology base, which today is focused primarily on Ethernet and Transmission Control Protocol/Internet Protocol (TCP/IP) technology. But it is difficult to tell how broad the base will be, because Excelan officials were very skimpy when it came to product details and shipping dates.

But then, Excelan does have other things on its mind, such as its rapidly disintegrating merger plans with Network Equipment Technologies, Inc. (NET) coupled with the possibility that NET will move forward with its option, as underlined under the agreement, to purchase up to 21% of Excelan stock [CW, May 23].

The Excelan announcement concerned the first product introduced under a new network architecture shell that would encompass TCP/IP and implemen-

Continued on page 35

Inside

- Arnet unveils add-on part for PS/2 models. Page 37.
- Corvus announces asynchronous communications software for PC-NOS nets. Page 37.

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Telecom users

CONTINUED FROM PAGE 33

and Rosemary Clooney.

Serious business was at hand as well. During an ICA board of directors meeting held here, the members voted to drop the $1 million billing stipulation for membership and open the doors to any company or organization that wants to join.

The ICA, founded 41 years ago, has consisted of some 700 member companies that reach an annual minimum of $1 million in communications billing.

ICA President Bill Koopman said, "Not that I expect the corner Laundromat to join the ICA, but that rule was established in the 1940s when $1 million was a lot of money. Today, it is very easy for a corporation to reach that much in billing."

WAN led the way

In addition to user business, a flurry of vendor announcements were issued at ICA, with special emphasis on wide-area networking (WAN).

Racal-Milgo in Sunrise, Fla., announced a gateway switch, called CMswitch, said to allow users access to several network management products from the Racal-Milgo line as well as other vendor's T1, private branch exchange and CCITT X.25 packet switching products. Slated to be available in August, the unit costs $3,450.

Infotron in Cherry Hill, N.J., said its Integrated Services Digital Network (ISDN) terminal adapter will now support Siemens Information Systems, Inc.'s EWSD, Northern Telecom, Inc.'s DMS 100 and AT&T's 5ESS central office switches. The company claimed it is the only ISDN terminal adapter maker to work with three major central office switching systems. Called Passport, the adapter requires Infotron's Passcom ISDN communications software.

Hands across the water

Several vendors announced efforts to build a greater international presence with their products and services — particularly fitting at a conference of global communications users.

Reston, Va.-based Telenet Communications Corp. announced it is expanding its billing and support services for customers with sites in Austria, Belgium, Canada, Israel, Italy, Korea and the Philippines. It is also forming a company based in Madrid, called Loginet, in a bid to service Spanish corporations.

Network Equipment Technologies, Inc. in Redwood City, Calif., said it will be opening support and training subsidiaries in London and Tokyo. Distribution arrangements have been made to install and maintain NET's T1 IDNX line in Switzerland, France, Taiwan and Korea. By 1989, the firm intends to sell products in 22 countries. The company also said it is offering new trunking modules to support transmission facilities found in France, West Germany and Japan.

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Leong

CONTINUED FROM PAGE 33

willingly holding hands on a nonproprietary network. Yet, lest you swoon, I feel compelled to remind you once again: It's only a demonstration.

The last time the group said it made history was at the November 1985 Autofact show in Detroit. And if you were there, you might remember that 21 vendors were on hand to establish multivendor interoperability using MAP 2.1.

That demonstration proved two things: First, multivendor factory networking is possible; and second, multivendor factory networking is more complex than it seems. In Detroit, an embarrassing number of glitches and hardware crashes occurred involving notables such as IBM, NCR and Intel.

A first

Engineers witnessed several sunrises while preparing for this upcoming event, which will be devoted to MAP 3.0. Even General Motors MAP spokesman Mike Kaminski said, "If you look for problems with this demonstration, you are going to find them. But remember that nothing like this has ever been tried before."

So when you go to the ENE, prepare yourself with questions aimed at finding out how your corporation can implement MAP in the future. Find out how much a MAP approach will cost compared with a Decnet installation, for example. Take notes and hold the vendors accountable for everything that is said there.

You know, there are fads and then there are trends. Fads consist of products that developers create to see if they endure the spaghetti test — throw it on the wall and see if it sticks.

I suspect MAP will be here for the long term, since the largest computer firms, user organizations and technical standards committees have spent nearly a decade discussing and developing it. And since the Open Systems Interconnect (OSI) model isn't about to go away, MAP and TOP products, OSI zealots say, will reach maturity in five to 10 years.

So, what are you to think if, on June 6, you find that there are countless problems on the networking floor, products won't be out for another six months and there are no factory software applications available yet to cut across the proprietary-protocol mess? Just remember: It's only a demonstration.

Leong is *Computerworld*'s West Coast Bureau Chief.

TCP/IP

FROM PAGE 33

sion network software for Microsoft Corp. MS-DOS-based systems, along with Western Digital Corp.'a Ethercard Plus adapter. It was designed to attach personal computers to a TCP/IP Ethernet network, the vendor said.

Network Research said the on-board buffer memory of Western Digital'a cards boosts Fusion's file-transfer speed.

The vendor's TCP/IP local-area network pricing strategy is indicative of the way LAN prices, in general, are heading, said Doug Gold, a communications analyst at International Data Corp. in Framingham, Mass.

"By 1992, I predict that the cost of a [LAN] connection will be down around $250," Gold said. Ethernet pricing already falls right in that range for PC LANs.

Lower pricing for TCP/IP networks comes at a time when vendors and industry observers are predicting that users will begin to turn their attention to the Open Systems Interconnect (OSI) model. TCP/IP consists of Levels 3 and 4 of the OSI model and competes with OSI'a TP4 transport standard.

However, few vendors have implemented TP4 on the personal computer side, according to Thomas Nolle, a communications consultant and president of Haddonfield, N.J.-based CIMI Corp. Moreover, there is so little practical difference between TP4 and TCP/IP that there is "precious little reason" for users to go back and reconfigure their nets using TP4, Nolle added.

Vendors and industry observers conceded that user migration to OSI will happen slowly during a five- to 10-year period. They said they do not expect TCP/IP users as a whole to suddenly jump ship for OSI.

The U.S. government, a long-time promoter of TCP/IP, has said all procurements will have to conform to the OSI stack by 1990.

OSI plans

FROM PAGE 33

tations of OSI and XNS along with a new release of its TCP/IP software.

Excelan said it is working on an OSI software product but said it will not release one until the market is ready, perhaps six months from now, according to a company spokeswoman.

OSI capabilities will be provided by the Universal Protocol Platform (UPP), a software architecture that Excelan officials claimed will eventually allow users to mix the network protocols listed above, on a host or front-end processor.

The Export 2000 communications server family is the first implementation of UPP. It is said to provide built-in network management software, featuring named services, configuring and boot servicing. Available now, Export 2000 supports the Microsoft Corp. MS-DOS, Digital Equipment Corp. VMS, MicroVMS and Sun Microsystems, Inc. SunOS operating systems. It also offers terminal services. Export 2000 costs $2,495.

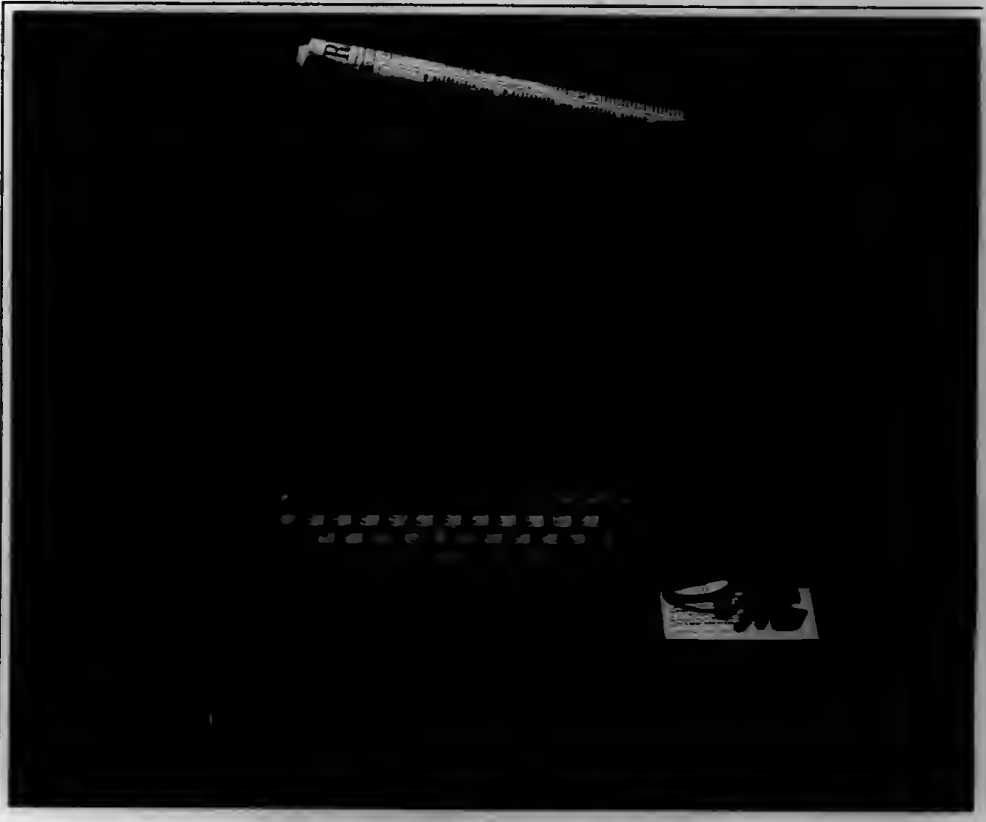
Also unveiled was TCP/IP 4.0, which reportedly highlights features such as security and high-level addressing. For now, UPP will only support Excelan's TCP/IP 4.0.

Will extend support

In a recent interview, Excelan vice-president of marketing Duane Murray assured customers that the UPP architecture will not move the company away from its installed TCP/IP base, but rather extend support to a wider variety of communications protocols.

According to Steve Spanier, Excelan'a product line manager for systems products, users today are limited to running Excelan'a TCP/IP on an Excelan front-end processor.

Excelan said it will provide the software interface between the as-yet-unidentified network protocols and UPP so that independent software developers do not have to get involved in changing any of their networking applications. UPP will be bundled with Microsoft'a OS/2 LAN Manager.



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Like its Silent 700™ predecessors, the LT220 sets new standards for portability, durability and reliability. All of which makes it the perfect tool for anyone who's ever wished for a VAX in their briefcase. In short, this may be the best little terminal in the world.

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TEXAS INSTRUMENTS

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Local-area network hardware

An add-on serial port board for IBM Personal System/2 Models 50, 60 and 80 is now being shipped by **Arnet Corp.**

Called **Multiport/2**, the product was designed for multiuser systems in vertical markets, small businesses and departments within larger corporations.

The product provides eight serial ports for connections to printers, modems, terminals and other personal computers. Multiuser operating system support includes The Santa Cruz Operation, Inc.'s Xenix 386 System V, Unix 386 from Microport Systems, Inc. and Pick from Pick Systems.

Multiport/2 costs $995.

Arnet, Suite 6, 618 Grassmere Park Drive, Nashville, Tenn. 37211. 800-366-8844.

A hard-disk management system that works with disks in excess of 50M bytes on a local-area network has been announced by **Gazelle Systems, Inc.**

Q-DOS Network Manager was designed to support all common DOS file management commands, including copying, moving, renaming, viewing and printing files. The package can reportedly accommodate 800 files per directory, with a capacity for 550 directories. An IBM-compatible or Personal System/2 computer, 256K bytes of memory and Microsoft Corp. MS-DOS 2.0 or higher are required for operation.

Q-DOS Network Manager costs $249.95.

Gazelle Systems, Suite 10, 42 N. University Ave., Provo, Utah 84601. 801-377-1288.

Local-area network software

Corvus Systems, Inc. has announced asynchronous communications software for use in networks running the Corvus PC-NOS operating system.

Dubbed the **Nostalk Asynchronous Communications Service**, the product is menu-driven and Hayes Microcomputer Products, Inc.-modem compatible and includes a script language and a learn mode. The product permits any modem on the network to be a shared resource.

Both communications server software and user communications software are included. The package supports Digital Equipment Corp. VT100 terminal emulation.

The Nostalk Asynchronous Communications Service costs $495.

Corvus Systems, 160 Great Oaks Blvd., San Jose, Calif. 95119. 408-281-4100.

Savant Concepts, Inc. has released **Version 2.0** of its **Network DCL Facility**. The facility executes standard DCL commands and procedures on multiple nodes of a Digital Equipment Corp. VAX/VMS network.

In addition to networking capabilities, the product includes list processing and parameter passing to symbols functions. Designed for system managers responsible for distributed VAX/VMS systems, the package reportedly can also be used by operators and end users.

The Network DCL Facility costs $600 to $2,000 per node. A full-function 60-day demonstration kit is available for $250.

Savant Concepts, Suite B, 1336 Willard, San Francisco, Calif. 94117. 415-753-2407.

Links

A terminal for providing simultaneous dual-host display operations has been introduced by the **Display Products Division of Applied Digital Data Systems, Inc.** (ADDS).

Positioned at the high end of the ASCII/ANSI terminal market, the **ADDS 2025** communicates simultaneously with two host computers on a split-screen or alternate-page basis. In dual-host mode, the product uses a 44-line display format and divides the 14-in. screen horizontally into two windows, each of which can be updated continually by its host. The ADDS 2025 is 12½-in. deep and 12.4-in. wide and weighs 24 pounds.

The ADDS 2025 costs $625.

Applied Digital Data Systems, 100 Marcus Blvd., Hauppauge, N.Y. 11788. 516-231-5400.

A recently introduced eight-port resource-sharing device from **Telebyte Technology, Inc.** allows any combination of personal computers and terminals to access a shared peripheral.

The **Model 327 Modem Allocator** employs an automatic polling sequence permitting eight RS-232C devices to access a synchronous modem or laser printer.

Front-panel status indicators reflect both the condition of the data and the control signals of the selected port. Operating power is derived from a wall-mounted transformer. Standard configuration is 110V, 60Hz; 220V, 50Hz is optional.

The Model 327 Modem Allocator costs $495.

Telebyte, 270 E. Pulaski Road, Greenlawn, N.Y. 11740. 516-423-3232.

Ark Electronic Products, Inc. has introduced communications software for IBM microcomputers.

The Datalink Express Series Communication System enables an IBM Personal Computer, PC XT or AT to emulate an IBM 3274/6 cluster controller with up to seven attached IBM 3278/9 or 3180 terminals and an IBM 3287 printer. The product allows the IBM Personal System/2 Models 50, 60 and 80 or the PC, XT or AT to emulate an IBM 3777-1 RJE workstation. Full bidirectional file transfer supports EBCDIC encoding.

The Datalink Express II takes advantage of PS/2 Micro Channel facilities, including Programmable Software Select for software configuration. Both products come with a 4.8K bit/sec. synchronous modem.

The Datalink Express Series costs $1,595; the Datalink Express II costs $1,995.

Ark Electronic Products, P.O. Box 2169, Melbourne, Fla. 32902. 800-228-0914.

A micro-to-mainframe software package that allows an IBM Personal System/2 to display mainframe software has been introduced by **Attachmate Corp.**

The **Hypergraph/8514 3270** was designed to maximize the capabilities of IBM's 8514 monitor and graphics adapter for the PS/2.

Mainframe graphics are translated into special commands for the 8514/A adapter to produce 1,024- by 768-pixel resolution.

The software, combined with an 8514 display system, reportedly draws complex images in less than one second.

Hypergraph/8514 is an add-on for Attachmate's Extra connectivity software, and will access a mainframe over IBM 3270 coaxial cable, remote modem or local-area network connections.

Hypergraph/8514 costs $895.

Attachmate, 3241 118th Ave, S.E., Bellevue, Wash. 98005. 800-426-6283.

File servers

An Ethernet and TCP/IP-based terminal server product was recently introduced by **Encore Computer Corp.**

Developed for the Unix and Transmission Control Protocol/Internet Protocol (TCP/IP) user, **Annex II** is available in either a 16- or 32-port unit.

The product incorporates a National Semiconductor Corp. 32016 processor and an Intel Corp. 82586 Ethernet controller.

The memory space provides up to 256 sessions. In addition, the Annex II is rack mountable.

The 32-port Annex II is priced at $256 per port.

Encore Computer, 257 Cedar Hill St., Marlboro, Mass. 01752. 617-460-0500.

Modems/Multiplexers

Anderson Jacobson, Inc. has announced a series of compact, eight-port link-level switching statistical multiplexers.

The **AJ2100** series products measure 12.8- by 6½- by 1¾-in. and reportedly can be used as small data private branch exchanges, line concentrators or both.

The composite port can be configured for synchronous operation at up to 72K bit/sec. and asynchronous operation at up to 19.2K bit/sec.

The AJ2100 series costs from $1,295 for a single unit.

Anderson Jacobson, 521 Charcot Ave., San Jose, Calif. 95131. 408-435-8520.

A T1 multiplexer that supports one or two lines and up to 32 nodes has been announced by **Teltone Corp.**

Max1 conforms to all AT&T and Bellcore standards. It provides a gateway to such public T1 networks as Accunet Switched 56, Dataphone Digital Service and Megacom Services. It is also applicable to private point-to-point or multipoint networks.

Features include software-selectable options, a floppy disk drive, an integral Channel Service Unit, a Bell 212A-compatible modem and D4 and ESF framing.

The Max1 costs approximately $39,000, depending on configuration.

Teltone, 10801 120th Ave. N.E., Kirkland, Wash. 98033. 206-827-9626.

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BIMTEXT — Word processing, document composition system Create formatted documents from free-form input DOS and OS.
BIMSWAP — Switch local 3270 BTAM terminals between multiple CICS partitions without special hardware or additional ports
BIMCMPRS — CICS 3270 data compression system Reduces response time for remote terminals significantly DOS and OS.
BIM-FMAP — CICS BMS on-line map generation and maintenance DOS and OS.
BIMECHO — Copies one CRT's output to another or printer for problem determination and demonstration
BIMP3270 — Comprehensive CRT screen image print facility Copy to terminal printers or spool queue for system printer
BIMSERV — On-line display of library directories and entries. VSAM Catalog entries, disk VTOC's, etc.
BIMCNSOL — Multiple/Remote System Console function for CICS. Display-only or full input/display versions available
BIMMONTR — DOS/VSE System Status, Performance Measurement, and POWER Queue display
BIMSUBMT — On-line Job Edit and Submission facility

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SYSTEMS & PERIPHERALS

HARD TALK

Stanley Gibson

Can Unix save minisupers?

If you look at the number of exhibitors at the World Supercomputer Exhibition held in Boston recently, you would think that supercomputing has never been hotter.

As it turned out, most of the exhibitors were actually vendors of what have come to be known as minisupercomputers, not supercomputers, properly speaking. If only true supercomputer vendors attended, there would have been only three or four exhibitors — hardly enough to put on a show.

But naturally, all the vendors had to refer to themselves as vendors of supercomputers, whether personal supercomputers, departmental supercomputers, affordable supercomputers or some other appellation. If nothing else, the conference called attention once again to how bad a prefix "super" is. What has been a mildly misleading adjective has become almost completely meaningless.

At any rate, the number of minisupercomputer vendors is probably bound to decrease in the next few years, simply because of market overcrowding.

Omri Serlin, a supercomputing and parallel processing analyst at Itom International in Los Altos, Calif., says cuts in government spending are one reason the minisupercomputer market

Continued on page 40

IBM exposes image network

Insurer uses scanner monitors, optical disks to conquer paper mountain

BY KATHY CHIN LEONG
CW STAFF

PALM SPRINGS, Calif. — By the end of 1989, the 10,000 pieces of mail the United Services Automobile Association (USAA) policy department receives daily will be viewed on scanner monitors and saved on optical disks. And the original documents will be thrown away, saving the insurance organization 40,000 square feet in office space, which is equivalent to $780,000 annually.

That is the goal for the USAA, a $3 billion auto and life insurance company serving 1.7 million military personnel, alumni and their families. At the IBM Executive Insurance Industry Conference held here recently, Jim Patterson, USAA casualty senior vice-president, revealed that the tremendous undertaking will be the result of an image networking project being co-developed with IBM, which commenced last July.

IBM will be releasing imaging products in a few months based on its work with USAA and other users with which it has co-developed applications, according to Bonnie Digrius, an analyst at Infocorp in Cupertino, Calif.

Robert Wilson, a vice-president at market research firm Dataquest, Inc. in San Jose, Calif., said he believes the imaging products could be announced at the rollout of IBM's System/36 and 38 follow-on, generally referred to as Silverlake.

Image network a reality

This month, USAA will be showing the first implementation of the image network, which consists of image scanners, optical storage units, an IBM 4381 Model 14 running MVS/XA and an IBM Token-Ring local-area network.

USAA is starting with three IBM Personal Computer AT workstations, but soon, 25 will be on-line. By the end of 1989, the company will have 1,000 PC ATs on the network in five cities serving 2,000 users.

An IBM spokesman said that despite the PC ATs' being discontinued in favor of the Personal System/2, IBM will fulfill its obligation to supply USAA with ATs during the next 1½ years, as specified in the contract.

With an essentially conservative corporate culture, the USAA has traditionally avoided rapid changes in its procedures. But with the new image processing system, the company is paving a radical path for other insurance entities that are only toying with the idea. A number of the 800 users at the seminar expressed interest in the USAA application.

"What USAA is doing is on the mark," one conference attendee said. He and several others said they are trying to move their organizations to implement similar systems.

Not only does image processing save paper costs, it also accelerates worker productivity, since documents can be accessed rapidly. By next year, USAA's users will be able to access 3-week-old files in less than one second. Letters that are 6

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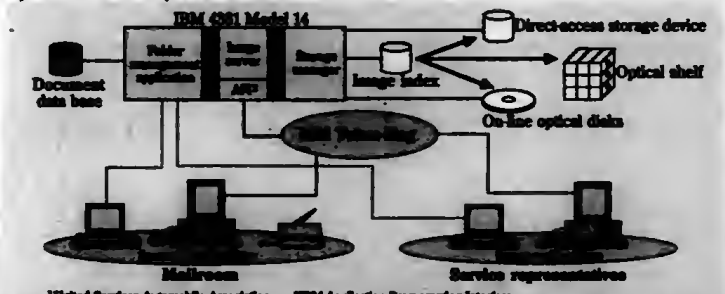
From paper to screen

Scanners enter USAA[1] mail into an image system, which distributes documents and allows service representatives to call up clients' data on-screen



[1]United Services Automobile Association [2]IBM Application Programming Interface

INFORMATION PROVIDED BY IBM

Rollouts pepper conference

BY STANLEY GIBSON
CW STAFF

BOSTON — A sprinkling of announcements, highlighted by a high-end cluster from Alliant Computer Systems Corp., seasoned the Second World Supercomputer Exhibition, held here recently.

Littleton, Mass.-based Alliant introduced a cluster of two eight-processor minisupercomputers. Meanwhile, Digital Equipment Corp. unveiled a user-developed package for writing applications on its VAX processors to run on Cray Research, Inc. supercomputers.

Cydrome, Inc. announced another version of its Cydra 5 departmental minisupercomputer, which was formally announced in January.

Most well-known vendors of supercomputers, minisupercomputers and powerful graphics workstations exhibited their wares at the show, which was held in conjunction with the Third International Conference on Supercomputing, sponsored by the International Supercomputing Institute in St. Petersburg, Fla.

Alliant's two-system cluster, called the FX/82 Computational Center, contains a total of 16

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Inside

- Kelly Computer ships first add-in board for HP 3000 Model 950. Page 40.
- Altos expands offerings in Pick Systems market. Page 43.

Kelly springs memory board for HP RISC unit

BY JAMES A. MARTIN
CW STAFF

MOUNTAIN VIEW, Calif. — Kelly Computer Systems, Inc. recently announced it is shipping the first third-party add-in memory board for Hewlett-Packard Co.'s reduced instruction set computing (RISC)-based HP 3000 Model 950.

Kelly's 3950A offers 16M bytes of memory for $25,000 compared with HP's 16M-byte, $40,000 add-in memory board for the Model 950.

HP's Model 950 comes standard with 64K bytes of memory and is expandable to 128K bytes in 16M-byte increments. Additional memory is required to improve the HP 3000 Model 950's performance, the company said.

RISC factors

RISC architecture, by its nature, requires fewer clock cycles than complex instruction set computing environments, but program code requires four to 10 times more memory, a company spokesman said.

Kelly's 3950A is said to be fully compatible with the HP 3000 Model 950. The memory subsystem uses 1M-bit nibble-mode dynamic random-access memory chips that the company said have an average access time of 120 nsec.

Single-bit error correction, double-bit error detection, memory error logging and battery backup are all fully supported.

Other features include an on-line/off-line convenience switch as well as on-line and activity LED indicators.

The board is supported by a lifetime warranty and return program and a two-week cost-free demonstration.

HP unveiled its new round of systems, including the HP 3000 Models 925 and 955, this spring [CW, April 11].

CSP designs VAX boards

BY STANLEY GIBSON
CW STAFF

BILLERICA, Mass. — Claiming to dramatically boost computational performance, CSP, Inc. recently announced an application accelerator for Digital Equipment Corp. Microvax processors.

The MAP-4000 consists of three Q-bus-compatible plug-in boards that are intended for DEC Microvax II and Microvax 3000 systems.

The MAP-4000 is capable of peak performance of 40 million floating-point operations per second (MFLOPS) in single-precision, or 32-bit, calculation. It is capable of 20 MFLOPS in double-precision, or 64-bit, operation.

Running the Linpack benchmark, the accelerator peforms between 5½ and 6 MFLOPS, according to a CSP spokesman.

"You are getting the performance of a Convex or Alliant on three plug-in boards," said CSP President Samuel Ochlis, referring to products from minisupercomputer makers Convex Computer Corp. and Alliant Computer Systems, Inc.

The MAP-4000 can offer 10 times the computing speed of a Microvax II on general compiled code and 100 times the speed in vector and matrix arithmetic that has been optimized using a programmer's tool kit offered by CSP.

The accelerator, with 2M bytes of memory, is priced at $18,995. Containing 8M bytes of memory, it is priced at $22,500. The subsystem's memory is expandable to 256M bytes.

Currently available, the board contains 13 very large-scale integration microprocessors, five of which are CSP's proprietary designs, Ochlis said.

The MAP-4000 is CSP's first product for Microvax processors.

The firm, a member of DEC's Cooperative Marketing Participant program, makes a variety of array processors for other DEC systems. Ochlis promised a similar accelerator for processors using DEC's VAXBI bus later this year.

Plexus ties DP system to CPUs

BY J. A. SAVAGE
CW STAFF

SAN JOSE, Calif. — Plexus Computers, Inc. recently said it is linking its Plexus Extended Data Processing Systems, or XDP, with mainframes in the IBM Systems Network Architecture (SNA) environment so its systems have more to do than just talk to themselves.

Three new products — the 3270/SNA Gateway, the 3270 Terminal Emulator and Link/3270 — are said to allow the Plexus compound data processing system to access mainframe applications and data bases.

The compound system encompasses image, text and alphanumeric processes.

Working parts

The Plexus XDP consists of a Unix-based departmental computer that operates with Microsoft Corp. MS-DOS-based personal computers as workstations using an Ethernet local-area network.

The Plexus XDP system can also include a document scanner, optical character recognition devices, optical disk storage facsimile machines and laser printers.

Link/3270 is communications software running on a workstation and is the link between the Plexus XDP and mainframes. It is listed at $495 per workstation.

The 3270/SNA Gateway with a PC board and software is priced at $15,800.

The 3270 Terminal Emulator is required on each XDP workstation that communicates with the mainframe.

The Terminal Emulator allows a workstation to have one or more on-line sessions with an application running on the mainframe. It operates under Microsoft's Windows and costs $195 per workstation.

All the Plexus products are scheduled to ship at the end of the month.

Gibson

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is cooling down.

All of the vendors say they are approaching high-power computing in a unique way; a way that will make them so distinctive in the market that they will have little competition.

Familiar market

But to what uses will their systems be put? The litany is almost always the same: Molecular modeling, computational fluid dynamics and seismic analysis head the list. In the end, the vendors are aiming for the same customers. Their hope is that their approach is truly better than any others.

Already there have been casualties, and even some apparent survivors have not gone unscathed.

Celerity Computing, verging on bankruptcy, was recently acquired by Floating Point Systems. Floating Point subsequently announced layoffs of its own.

Alliant Computer Systems, although not likely to go out of business, has had layoffs.

The hope for all these firms may be in Unix, around which most of the vendors have based their software strategy.

The idea is that there will be many applications written under Unix and these will be easily portable to the vendors' machines. Thus, if the firms are going to fail, it will not be for lack of software.

Battleground?

Indeed, this strategy just might work. In previous shakeouts, such as in the personal computer market, the vendors with proprietary operating systems have been whittled down to two or so.

Now all are starting out, in effect, with one operating system. The resulting battle, if all goes according to plan, will be fought on the merits of the hardware, service and support.

And so the future of the market could be a test of the promise of Unix. If Unix does not offer the portability it promises, the bloodletting in the minisupercomputer shakeout will be all the greater.

Gibson is *Computerworld*'s senior editor, systems & peripherals.

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IBM network

FROM PAGE 39

months old will take 15 to 20 seconds to access. Mail that is up to 2 years old will be tapped in less than two minutes.

The project is the final tier of a $100 million automation overhaul that USAA started in 1981. The company has already spent millions in internal software development and application integration.

Since USAA sells via mail and telemarketing and not through agents, a chief priority in the imaging project was reducing the lag time between receiving and delivering mail.

The image system lets mail clerks feed documents into a scanner that transmits the data into USAA's internally developed File Management Folder software. Then the service representative retrieves the file from optical disk and views the document from his IBM PC AT.

The company had begun to store documents on microfilm, but found it could not store pictures of accidents or damaged goods — evidence that is necessary in filing claims.

Currently, 90% of the USAA imaging system is commercially available. The remaining 10% consists of IBM custom-developed products: an imaging card for the PC AT, imaging software and an interface that links the scanner to the workstation.

IBM is also acting as a systems integrator, according to Bob Young, the firm's manager of image technology. The scanner comes from Bell & Howell Co., the optical system from Filenet Corp. Whether IBM will sell the custom pieces of hardware and software is not yet known, he said.

When the project is complete, USAA said, it will allow the company to get rid of 99% of the original paper documents and save thousands of dollars in office space.

Conference

FROM PAGE 39

CPUs, eight in each of its component systems. The cluster is priced at $1.25 million. The eight CPUs of each system in the cluster can be configured in a variety of ways.

The CPUs can be arranged as multiple individual processors working on separate jobs, or they can be grouped into parallel configurations, called "complexes," consisting of two to eight CPUs, the vendor said.

Speedier than VAX?

Alliant claimed the power of the FX/82 is eight times that of DEC's high-end VAX 8840, consisting of four processors.

The cluster consists of two FX/80, each configured with 64M bytes of memory, 1.1G bytes of disk and a triple-density tape drive. Software licenses for the Concentrix operating system and FX/Fortran are also included.

Existing FX/80 systems can be upgraded to the cluster. The FX/82 is available in the current quarter, the vendor said.

DEC's software, called the VAX SDE/Science Integration Package, is said to ease development of computer applications for seismic analysis, high-energy physics, weather forecasting and molecular modeling.

The package was originally developed at the Pittsburgh Supercomputing Center, a consortium of the University of Pittsburgh, Carnegie-Mellon University and Westinghouse Electric Corp. The VAX/SDE Science Integration Package will be available in the first quarter of fiscal 1989 and cost $15,500.

Milpitas, Calif.-based Cydrome unveiled the Cydra 5 Model 1205 system. Cydra 5 systems are also sold by Prime Computer, Inc. as the MXCL 5. A Prime spokesman said that Prime expects to offer its own version of the Model 1205.

The new model, which sells for $495,000, is priced below the Cydrome's original Cydra 5 Model 1200.

The Model 1205's I/O subsystem is tailored to the needs of entry-level to medium-size users, the vendor said. Memory capacity is 32M bytes and is expandable up to 512M bytes. The Model 1205 is available immediately.

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NEW PRODUCTS

Processors

Altos Computer Systems, Inc. has expanded its offerings in the Pick Systems market.

The **Altos 3068 LE** system is reportedly the first Altos Pick offering designed to retail in the $10,000 to $15,000 range. The system includes a Motorola, Inc. 68020 processor, and its memory and hard-disk storage architecture allow the unit to accommodate from eight to 120 users. The system is said to run with a range of horizontal office automation tools.

Altos Computer Systems, 2641 Orchard Pkwy., San Jose, Calif. 95134. 408-432-6200.

Data storage

A series of memory boards for Digital Equipment Corp.'s Microvax 3000 and Vaxstation 3000 have been announced by **Clearpoint Research Corp.**

Called the **MV/3000**, the boards are available in 8M-, 10M- or 32M-byte configurations. The products use a custom gate array design to deliver 16M or 32M bytes of memory using 1M-bit dynamic random-access memory chips. The boards can also be used by DEC Microvax II customers who upgrade their Microvax II CPU boards to the Microvax 3000.

The MV/3000 costs $3,500 for the 8M-byte version.

Clearpoint Research, 99 South St., Hopkinton, Mass. 01748. 617-435-2000.

Printers/Plotters

Digital Equipment Corp. has added two government-certified models to its line of laser printers and is also offering price reductions on several existing units.

The **RF-LNO3** and **RF-LNO3S** are DEC's most recent desktop laser printers that are accredited to meet U.S. government Tempest requirements. The RF-LNO3 prints at 8 page/min with 300 by 300 dot/in. resolution. It costs $4,995. The RF-LNO3S reportedly offers full-page bit-map graphics at 300 by 300 dot/in. The printer costs $7,995.

The **Scriptprinter**, an 8 page/min desktop laser printer, now costs $5,495, a 13% reduction from the original price of $6,610.

DEC, 146 Main St., Maynard, Mass. 01754. 617-897-5111.

Bull Peripherals Corp. has announced the **MP6060** non-impact printer, the latest addition to its M6000 series.

The product is positioned as a direct alternative to laser, ion deposition and LED array printers used in data processing, forms, bar coding and direct mail applications.

Print resolution is 240 dot/in. at 60 page/min, and page rotation capabilities range from zero to 90 degrees.

The MP6060 costs $77,851 and will ship immediately.

Bull Peripherals, 8303 Wyman St., Waltham, Mass. 02154. 617-890-5200.

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The CIM connection: Reaching out to the shop floor

BY LARRY STEVENS

Executives at Weyerhaeuser Co.'s giant pulp and paper mill in Longview, Wash., knew they had an untapped resource in the firm's 110 supervisors and operators, and they wanted some way to unleash it.

Alton Loe, the plant's systems manager, explains, "These are the people who know the most about our processes. But because of the limited way information flowed around the plant, it was necessary to give most of the control to schedulers, who knew less about the process and who were only here for one out of the three shifts."

Computer-integrated manufacturing (CIM) changed all that.

One process over which executives wanted production workers to have more control was chemical proportions. Paper quality is determined mostly by a mix of about six chemicals that are combined with the pulp. The chemicals bear different characteristics, but they can be mixed in a number of ways to achieve the same paper quality. It could save the company a significant amount of money if process staff chose the mix of chemicals based on up-to-the minute information on availability and price.

"If you want to ask operators on the plant floor to make decisions, you can do that anytime. But if you want them to make good decisions, you have to give them good information," Loe says. To do this, Loe headed a team that developed a CIM system for Weyerhaeuser.

Weyerhaeuser's CIM setup, which is built around a Digital Equipment Corp. VAX-11/785 and a VAX 8350, collects information about such things as a chemical's temperature, pressure, consistency, flow and direction rate as well as availability and price. It then makes the data immediately available through terminals to those operating the dryers, digesters, washers and other equipment.

According to Loe, "Before CIM, all the information would have to be gathered on slips of paper and coordinated by schedulers and sent around to the various departments by messengers. The operators — the ones who know our system best — were often the last to receive vital data." Now, with information at their fingertips, operators are better able to make decisions that have substantially increased plant efficiency.

What is it?

CIM is a means of integrating the plant floor — and often other areas of an organization — through computerised flow of data. According to Dan Cretu, an analyst at Automation Research Corp., a Medfield, Mass.-based market research firm, CIM is a complete, integrated system that may include order entry, parts design, manufacturing and distribution as well as customer feedback.

Using CIM, a manufacturing firm's employees can go to a terminal, look at what has been ordered, check how many pieces are in stock and then track the manufacturing process for that part, the suppliers and, ultimately, the service record for that type of product.

Financial and administrative systems can also be linked to such networks. While getting information to the plant floor is the most important part of the CIM system at Weyerhaeuser, data sent to the financial departments also provides quick reports for forecasting and planning.

Experts expect that within the next 10 years, all large companies and many medium-size and small manufacturing companies will be implementing some level of computer integration.

According to Glen Allmendinger, president of Harbor Research Corp., a Boston-based manufacturing research and consulting firm, the total amount spent in the U.S. CIM market in 1987 was approximately $21.4 billion. Allmendinger estimates a $38.4 billion U.S. market and $89.5 billion worldwide market by 1993. Automation Research's Cretu adds that two-thirds of all CIM expenses are in-house.

While in-house integration expenses may add up, they may also be well worth the cost. The CIM project at Weyerhaeuser was begun in June 1985 and completed in February 1987. Using the financial reports that come directly from the process centers, Loe estimates the company is saving more than $1 million annually in raw materials alone. Weyerhaeuser is so convinced of the concept's viability that it is now selling its CIM system under a subsidiary, Weyerhaeuser Information Services.

One facet of CIM that may catch an MIS manager's eye is

LES KANTUREK

INSIDE

Bottler fills simulated cans first
Page 46

MAP 3.0 follows seven-layer OSI model
Page 52

Stevens is a free-lance writer based in Springfield, Mass.

CIM

FROM PREVIOUS PAGE

that it is a new opportunity for development and advancement. According to Marvin Martin, vice-president of information resources at R. J. Reynolds Tobacco Co. in Winston-Salem, N.C., CIM has allowed his information resources group to go beyond the areas normally thought of as MIS.

Follow the leader

Martin sees MIS staff as systems integrators. "We're responsible for implementation and maintenance of all manufacturing and business systems," Martin says. "We are not involved in manufacturing issues such as choosing the exact sensor to use in a workstation, but we would specify the interface for that sensor." A rule of thumb at Reynolds, Martin says, is that "manufacturing specifies the equipment, and we specify the interface."

According to Alan Anderson, partner in charge of manufacturing consulting at Ernst & Whinney in Chicago, CIM leadership is currently being shared in most companies by technology groups other than MIS because of the technology's roots in flexible manufacturing, computer-aided design (CAD) and numerical control. "But as integration gets tighter," Anderson says, "MIS will be needed for networking and data base management."

In addition, he says, as companies mature with CIM, they realize that flow of information is more important than automation of tasks. As that happens, MIS will have greater opportunities for involvement. "MIS won't be able to lead CIM in all companies," Anderson says, "but it should play a very important role."

The successful evolution of the Manufacturing Automation Protocol will also help MIS integrate the shop floor (see story page 52).

One often-expressed advantage of CIM is that it cuts costs by decreasing the use of raw materials, lowering maintenance expenses and even reducing the need for capital expenditures through more efficient use of plant facilities.

Reynolds' Martin says CIM has provided for smaller, more flexible runs, more efficient flow of materials and better control of the factory floor. This has allowed, for example, the replacement of large forklifts by smaller, automatic vehicles.

"Just by eliminating forklifts," Martin says, "we were able to build a smaller facility, increase safety and cut down on maintenance costs." Reynolds has spent almost $2 billion so far in the '80s on modernizing its facilities, including building a 47-acre state-of-the-art facility, called Tobaccoville, which includes an extensive CIM network. At Reynolds, CIM is totally integrated on four levels: shop floor, area, plant and corporate system. The corporate system includes financial planning, variance reporting, performance reporting, distribution requirements planning, material requirements planning, manufacturing resource planning, personnel, payroll, labor reporting, standard costs and inventory tracking.

Workers may express concern that CIM will eliminate jobs, but Martin insists that while the technology will eventually shift the types of jobs at Reynolds, its 10,000-person work force will remain at about the same level. "Our cost savings do not come from layoffs," he says.

Experts agree that a company rarely experiences reduced payroll if CIM is implemented correctly. Rather, cost savings come partly from the added flexibility of shifting production to meet market conditions.

At Reynolds, schedulers use a number of parameters such as demand, availability of equipment and availability of raw materials to determine which product will be manufactured at which station. The operator finds out through terminals which product be will be fabricating, and the system automatically dispatches automatic wire-guided vehicles that contain the wrapping, tobacco, filters and other necessary materials.

Flexibility key

At Allen-Bradley Co., a Milwaukee-based manufacturer of engine parts, the flexibility afforded by CIM is the major factor in the company's impressive growth. The firm's old method of operating made use of long assembly lines to fabricate even simple components. Now machines are able to shift quickly from one part to another. In one example, a machine can make any one of 777 different parts without pausing.

The information for a part might come from the shop floor, from the company's engineering department or even from a sales agent in the field. This flexibility allows the company to make more than 300,000 different parts. Allen-Bradley's sales this year will be $1.2 billion to $1.3 billion, compared with $450 million in 1980.

According to Alan Laduzinsky, technical communications consultant at Allen-Bradley, the company's CIM effort is a cooperative project that includes plant floor personnel, real-time engineers and MIS, and each group is learning to appreciate what the other can do.

Allen-Bradley has four engineering data bases, which will be incorporated into an Oracle Corp. relational data base residing on a DEC Vaxcluster. "We're accessing information from that to build programs for assembly and test," Laduzinsky says. The transformation of different data bases is primarily being done by MIS, but the conversion of CAD and computer-aided engineering to allow for extraction of information for assembly and testing is done by real-time engineers.

The success at Allen-Bradley comes not only from flexible manufacturing but also from such factors as lower inventory and better quality. This has resulted in numbers that are so dramatically different from pre-CIM days that they are hard to compare meaningfully.

"How do you cost an end-of-day inventory that includes only a few bolts, springs and grommets when before we had 180 days' supply on hand?" Laduzinsky asks. "How do you factor 20 defects per million? Can we say we've reduced rejects by a thousandfold? It sounds ridiculous. In some cases, we've reduced setup time to zero. Do we really eliminate setup as a factor when we're costing a job?"

The flexibility and immediacy of information afforded by CIM also helps reduce errors and

Why CIM?

The pluses of computer-integrated manufacturing

Cuts costs:
- Decreases use of raw materials
- Lowers maintenance expenses
- Reduces capital expenditures through more efficient use of plant facilities

Allows for just-in-time manufacturing:
- Enables smaller, more flexible manufacturing runs
- Provides for more efficient flow of materials
- Institutes better control of the factory floor

Improves quality of production:
- Sets up immediate availability of information
- Reduces manufacturing errors
- Adds ability to make late design changes

CW CHART

Steps to a smoother lager

BY JANET FIDERIO

At Adolph Coors Co., bottling beer isn't what it used to be. With a high-tech twist, Coors has used simulation, long a tool in component design, to smooth production-line design.

For the past two years, Coors has been experimenting with a Digital Equipment Corp. Microvax and with customized software that allows engineers to simulate can manufacturing and package-filling production lines before they are constructed.

Through simulation, engineers can experiment with alternative line-design scenarios. They can create a model of equipment and controls and keep refining it in an iterative process as they incorporate new suggestions, add processes or evaluate alternatives.

So far, actual simulations have helped Coors spot potential bottlenecks — areas in production lines where accumulation capacity should be either increased or decreased — as well as other design flaws that would be expensive if implemented.

More important, the simulations provide engineers with data on expected line throughput after construction — information that was difficult to estimate when a static design process was used.

Fiderio is a Computerworld senior editor, features.

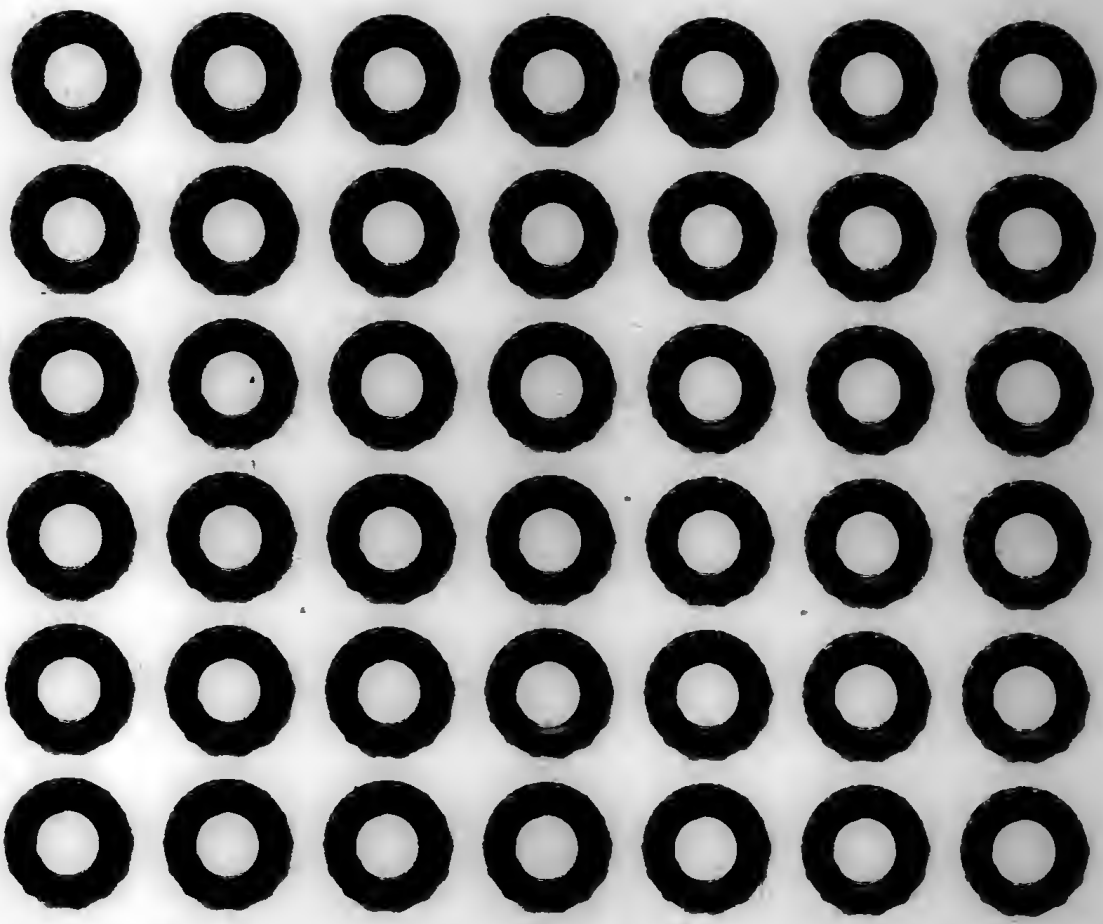
According to Bud Cookson, a principal engineer and advocate for factory integration at Coors, simulation will play an increasingly important role at the company as line efficiency and utilization become more critical.

"What we are really doing," Cookson says, "is optimizing the line prior to construction." According to Cookson, the first project on which simulation was used — a new can manufacturing line that now produces 2,600 cans a minute — brought Coors a 25-to-1 return on investment. "That means that for every dollar we invested in the simulation project [including development of custom software, hardware and consulting], we returned or had the potential of returning $25 to the company," Cookson says.

Coors has used simulation in six design projects. The software consists of a manufacturing simulator tailored to the firm's engineering terminology and needs. It was developed with SLAM II, a Fortran-based language with manufacturing and material handling constructs and Tess, a graphics tool and relational data base. Both products were created by Pritsker and Associates, Inc.

While Coors' MIS group is not involved in the support of the simulation product, it is working with the company's engineering group to further joint factory automation goals. •

Sample graphic *of a high-speed filler line.*



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The Timken Company

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improve product quality.

For example, at Lockheed Aeronautical Systems Co. in Burbank, Calif., there were times when an operator was incorporating an old design into a part up to two weeks after the design had been changed and other machines had incorporated the new one. According to William Crawford, an industrial engineer at the company, "With our old paper method, it was very difficult for plant managers to remember everyone he had to

Ship Star's Crowder

give change orders to.

"There was often a delay, sometimes a costly one, before everyone was informed," he continues. "Now change orders are sent electronically, and everyone gets them at the same time: immediately."

Crawford also says he notices higher quality, since the operators no longer have to run from station to station to check status on the process. "When everything is available at a screen sitting right in front of you," he says, "you are more inclined to access available data."

Over and over

CIM also saves a company money by providing greater repeatability. Terry Fearn, manager of computer control systems at The Timken Co. steel division in Canton, Ohio, points out, "With the old method, it was hard to have a process done exactly the same way over and over. Now the system remembers how something was done, and it can be repeated automatically."

Timken incorporated CIM technology in its new plant, which was built in 1985. It uses two VAX 8350s and a PDP-11/44 at each station.

While CIM provides advantages by mechanizing tasks formerly done manually, a corporation often has to be willing to institute fundamental changes to take full advantage of it.

Bob Crowder, president of Ship Star Associates, Inc., a Newark, Del., company that works with users to plan and implement CIM, points out that for CIM to be successful, it must have top management support.

"Companies must have a vision of where they want to go and how they want CIM to help them get there," Crowder says. "You can't just say you want to implement CIM and then go out and buy it as you would a new suit. If a company has a problem with CIM, it's related to bad planning or commitment, not with lack of technology."

Getting it together

But most people who have been involved in a CIM project say that planning on a global level is tough in the typical organizational structure that tends to separate different functions. Ernst & Whinney's Anderson says, "In the traditional corporate structure, each department is given the challenge of maximizing its functions and profitability even if that is to the detriment of the organization as a whole. Before you talk about integration, there are walls that have to be torn down. And that's a much harder problem than the technology."

Allen-Bradley's experience was typical. "Our biggest difficulties during the planning stage of CIM," Laduzinsky says, "was getting different functions to talk together and come out with a mutually agreeable system. Many people in an organization tend to think only of their specialty — that's how they were trained. Someone may come up with a great solution within their specialty, but it hits a stumbling block down the line, and he is forced to rethink his idea."

Laduzinsky says his firm's four different operating divisions used different data structures to designate information on circuit boards. In order to implement CIM, they needed to agree on a uniform structure.

"Each division head came to

More than 50% of all business PCs don't communicate.

UN

the meeting with a long wish list," Ladusinsky explains. "Finally, it came down to what was the minimum each department could accept. And that was incorporated in a totally new and neutral data structure. Since we didn't standardize on one division's system, everyone had the same degree of pain."

Two divisions that normally have very little contact with each other in most organizations are MIS and production. Yet, in order to create a CIM system, MIS must understand the process and flow of the shop floor; conversely, production workers and supervisors must be able to decide which reports will make their areas more productive. Unfortunately, production workers often do not know the reports they will need, since they have never been given the opportunity to explore the power of CIM.

As a result, after the system is implemented, MIS gets besieged with requests for new reports as workers discover the possibilities of the new system.

Hundreds of programmers

Weyerhaeuser solved this problem by allowing production workers to create custom reports out of any available information. To facilitate this, data is kept in the data base in raw form for three years.

But sophistication came gradually as workers played with the system, Loe explains. "The traditional way of having MIS create reports causes backlog and stifles creativity. By allowing end users to custom-design the system, we've unleashed the creativity of our 300-person production force instead of depending on the creativity of eight or 10 programmers. Some of the people are doing things with their computers that I don't even know how to do."

Loe has gone so far as to eliminate automatic report generation — an MIS service, he says, that results in stacks of unread material. His system is designed to give on-demand reports only.

Timken's Fearn agrees that users should be involved in decisions about data capture and system design. When his company first implemented CIM, it suddenly had a great deal of new information available to it, but it did not have the organizational procedures to make good use of that data.

General Dynamics' McMahon

"We decided to put first things first," Fearn says. "The process people had to have information in order to run their machines, so they were on-line first. Then, as the financial and administrative areas began to determine what information they could use, we designed the data base to suit their needs as well."

No weak links

While the speedy flow of information should expedite all processes, if administrative procedures do not keep up with the new technology, they can throw a monkey wrench into the entire operation.

Andrew Young, director of new products at Northern Telecom, Inc. in Santa Clara, Calif., knows about that type of problem. Northern Telecom, a manufacturer of communications hardware, is two-thirds of the way toward full CIM implementation in its manufacturing environment. But, Young stresses, "any system is as slow as its weakest link. You might have a wonderful CAD/CAM system, but if 10 people have to OK a design change on paper, it won't do you any good."

Young points to a problem that existed at Northern Telecom, in which a new CAD system actually slowed processes, since the blueprints had to be continually printed out each time an engineer signed off on it.

The biggest challenge to MIS in planning a CIM system lies in finding out how a process is

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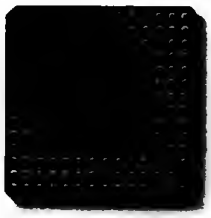

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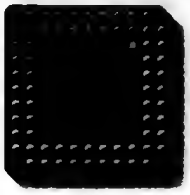

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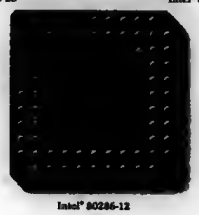

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really done, as opposed to how the documentation says it is done. This is a continuing problem in General Dynamics Corp.'s CIM project.

"People are very good at covering up for system deficiencies," says Robert McMahon, manager of manufacturing systems at General Dynamics' offices in White Settlement, Texas. "The paperwork may say to do it one way, but the process worker quickly discovers that it's wrong. So he does it the right way without telling anyone. Pretty soon, you have a tangled web of undocumented processes. There are a lot of unknowns hidden in the craftsmanship and skill of the production workers. To discover them requires a lot of interviewing." General Dynamics is now in the third year of a 10-year CIM development project.

Even when companies think they have researched CIM thoroughly, Ernst & Whinney's Anderson says, he has found that many fail, because they rush to automate without understanding how that automation will help their processes. "Automation can be an expensive toy if it is not tied in with a vision of where the company is going," he cautions. "If a company has a serious problem, buying a robot or two probably won't help and might make matters worse. Those organizations that fail with CIM are those who look at it as a purely technical issue."

> "AUTOMATION can be an expensive toy if it is not tied in with a vision of where the company is going."
>
> ALAN ANDERSON
> ERNST & WHINNEY

Because CIM requires such fundamental changes in the organization, it is difficult to measure its success with traditional equations. Reynolds' Martin points out, "You can't cost-justify a CIM investment the same way you can a new mainframe or new software. The functional and structural changes that come with integration remain intangible for a long time. And if the company becomes more profitable, it's hard to know where to apply that profit. It requires a new way of thinking about return on investment."

Companies that have been successful with CIM are those willing to make the organizational changes required to take full advantage of integration.

Many organizations actually find CIM implementation to be a painful process requiring a redefinition of responsibilities from top to bottom.

"Before a company embarks on a CIM project," Martin says, "it must have the support of top management. Without that unqualified support, those factions in an organization that are afraid of losing power can destroy the project in the bud."

But for those companies that make the commitment, CIM is radically improving the way they do business. •

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Chart a new MAP

BY GERALD ARCURI

Look out, MAP 3.0 is coming. No kidding.

Manufacturing Automation Protocol (MAP) Version 3.0 promises to cause a big stir when it debuts next week. With 3.0, MIS in manufacturing will get a foundation for future applications and a growth path that ensures compatibility.

The major changes promised include the addition of a presentation layer to the protocol, the implementation of Manufacture Message Service (MMS) and the anticipated implementation of Enhanced Performance Architecture. Enhanced functions include full Open Systems Interconnect (OSI) File Transfer, Access and Management (FTAM) capabilities and Network Management and Directory Services.

• **Presentation layer.** This is a major architectural enhancement, because it completes the protocol's compliance with the International Standards Organization's OSI reference model.

With the presentation layer, MAP now complies fully with the seven-level model. The current version, 2.2, supports only six of the seven levels — application, session, transport, network, data link and physical.

The normal functions of presentation services permit generalized transfer of information between computers or devices whose structural rules might otherwise inhibit exchange. Presentation services permit information elements to be identified by category and for typed information to be correctly structured for the destination device.

Presentation services help users prepare applications that are hardware independent. According to Paul Accampo, Hewlett-Packard Co.'s MAP program manager, if users make a 3.0 implementation with MMS, any future enhancements to MMS would be compatible with existing code.

• **Manufacture Message Service.** Another significant change for MAP is the movement to MMS from Manufacturing Message Format Standard (MMFS). MMFS, seen by many as the heart of MAP, provides a type of standard meaning and message format from which fields are constructed, as well as a syntax for exchanging fields in a manufacturing environment. The significance of MMS is that it is at the draft international standard level within OSI, as opposed to MMFS, an addition to the original specification.

• **Minimap.** The third significant change is the implementation, or Minimap, capability of Enhanced Performance Architecture. Minimap is considered by some to provide faster response times, because it does not go through all the layers — just the physical, data link and applications layers.

Bharat Thacker, president of Universal Computing Applications in Southfield, Mich., and a MAP consultant, says Enhanced Performance Architecture is significant because it supports two implementations of MAP on the same node. It supports full MAP on one side and Minimap on the other.

Thacker says, "Users in the process industries and elsewhere who wanted the ability to have higher throughput at the cost of the functionality of some layers [of the OSI model] can do that now with Minimap."

• **Administrative changes.** Functional changes have also been implemented to facilitate the use and management of the network. Full OSI FTAM capabilities are now available, and Network Management and Directory Services have also been modified.

FTAM permits communicating application pairs to read, write, create and delete files.

Under MAP Version 2.2, only a subset of OSI FTAM capabilities have been implemented, but Version 3.0 will provide full support. With Version 3.0, record access will be provided, as opposed to the previous subset, which only supported the transfer of complete files.

Network Management facilities now support all seven layers and monitor network performance. They are also available to manage the network configuration and monitor fault recovery. Directory Services provide users with the ability to locate other users on the net and give users the capability to retrieve network directory data.

MAP 3.0 products

The vendors providing products for Version 2.2 and other products in the Version 2 category will most likely continue to develop and deliver products for Version 3.0. At a MAP/TOP media briefing held early this month, Mike Kaminski, a longtime champion of MAP and MAP program manager at General Motors Corp., explained that some vendors will need extra time to test their products and ensure compatibility. He added that GM expects to install Version 3.0 products in one of its plants late this fall.

Kaminski also said that the participants in the Corporation for Open Systems booth at next week's Enterprise Networking Event in Baltimore — where MAP 3.0 is scheduled to be announced — will probably offer MAP/Technical Office Protocol products by the end of this year.

Universal Computing's Thacker says many vendors will respond to user requests for MAP products with higher performance. For example, he says that vendors previously provided products using high-level data link control at the Level 2 Data Link layer, with transmission speeds of 56K to 460K bit/sec. Thacker says he anticipates that more vendors will provide bus-level products with higher transmission speeds with Version 3.0.

Arcuri is group managing editor of the "Manufacturing Automation Series" at Datapro Research in Delran, N.J.

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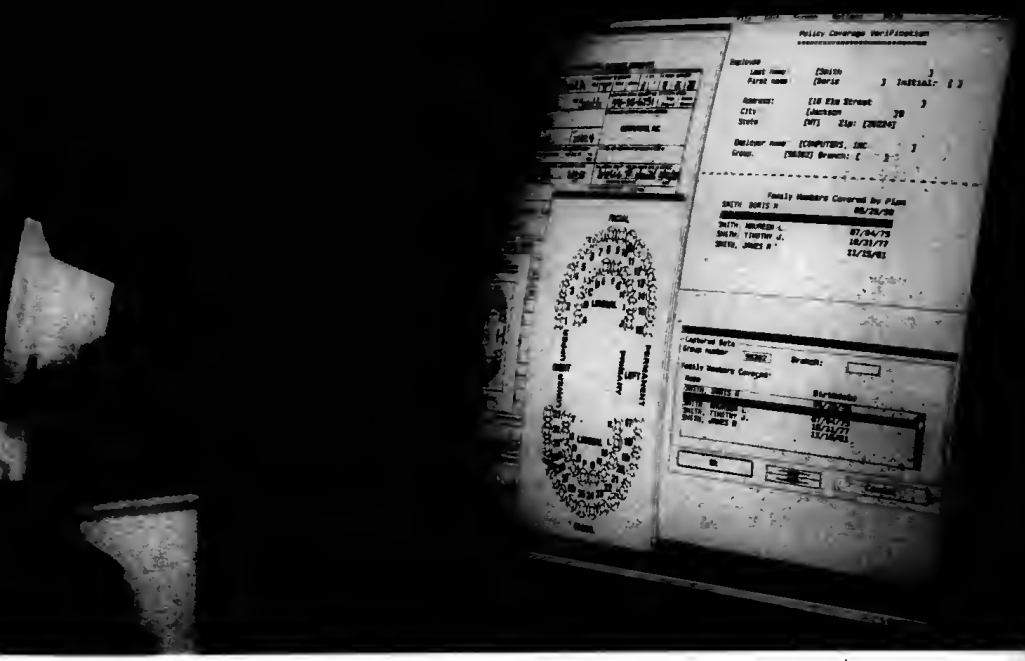

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Bad news for trees

Paperless offices? Not with an empire of report-starved managers and vanity publishers

BY EDWARD TENNER

Information technology was supposed to let us taper off paper. But we emphatically have not. The paperless office, the leafless library, the inkless newspaper, the cashless, checkless society — all have gone the way of the Empire State Building'a dirigible mooring, the backyard helipad, the nuclear-powered convertible, the vitamin-pill dinner and the Paperwork Reduction Act of 1980. The micro millennium is turning out to be the cellulose century.

Futurists have never liked paper, except in forms nobody ever asked for, like disposable underwear. As early as 1895, a pair of French satirists were predicting that the record player would bring the end of the book. Around the turn of the century, Jules Verne doubted there would be novels or romances in 50 to 100 years. By the 1960s, Marshall McLuhan was writing as though the Gutenberg Galaxy would collapse into a black hole.

Makers of computer hardware were equally unsympathetic. Not so long ago, they treated printers as boring peripherals. When IBM introduced its original Personal Computer in 1981, it didn't deign to make the printer itself.

But paper, that mere commodity, took its revenge. Paper prices have been rising. So have the shares of paper mills and office supply makers on the stock exchanges. By July 1986, General Binding Corp.'a earnings per share had increased 62.5% over July 1985. IBM'a original printer contractor, Epson America, Inc., now successfully makes competing microcomputers.

Truth in numbers

On its way out is the old automated-office fantasy of spotless desks and electronic mail. In its place: an empire of vanity publishers swapping memorandums enhanced by bit-mapped graphics. The statistics speak for themselves. From 1959 to 1986, America'a consumption of writing and printing paper increased from 6.83 million to 21.99 million tons, or 320%, while the real gross national product rose 280%. One magazine for records managers estimated that between 1981 and 1984, U.S. business use of paper went from 850 billion to 1.4 trillion pages.

Between 1986 and 1990, printed material may rise from 2.5 trillion to four trillion pages. About 2.17 million tons of form bond were used in 1986. German ships that bring Mercedes and BMWs, Leitz and Zeiss instruments and Heidelberg presses return laden with waste paper for recycling — at last, an export in which America excels.

From 1936 to 1986, the volume of U.S. mail increased from 80 billion to 146 billion pieces a year, and the U.S. Postal Service estimates a total of 170 billion by 1990. In Manhattan, where volume is increasing at the rate of 10% annually, the Postal Service is planning to spend $200 million on a new facility for handling old-fashioned paper mail. Meanwhile, none of the ten-odd American public E-mail networks has more than 300,000 subscribers.

In the summer of 1987, newsprint production was approaching capacity (consumption had increased from 11.9 million metric tons in 1986 to 12.2 million metric tons), with prices rising and a 10% increase of domestic plant capacity planned for the next three years.

A single newsstand in the Pan Am Building in New York stocks 2,500 magazines, and a trade association reports that 265 more magazine titles were published in 1987 than in 1986. Even the Information Industry Association, which includes most of the leading data base services as well as print media, distributes news to its members by a weekly (paper) letter, not an on-line service.

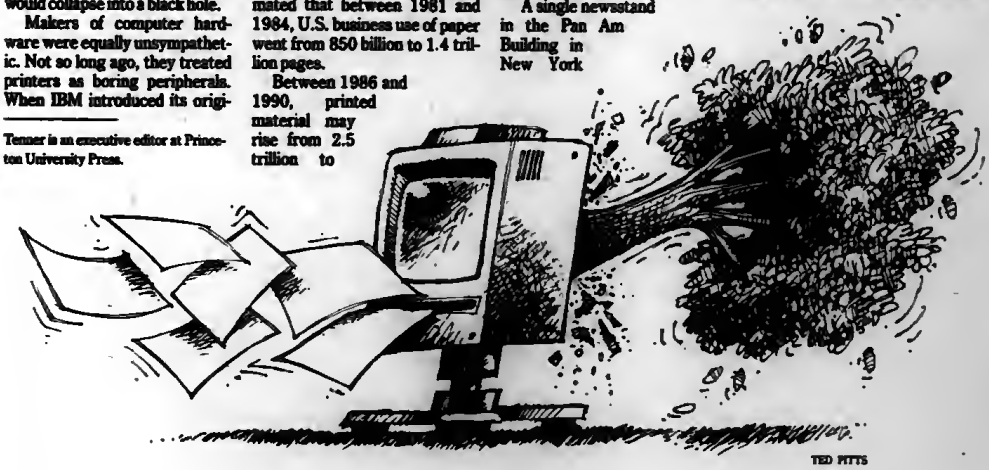
In the money

Bankers may have chilled the passbook savings account, but they have replaced it with quarterly or even monthly statements. Consumers are still avoiding the home computer-based on-line services that some banks and brokerages began to offer with a flourish in the early 1980s.

And old-fashioned checks are thriving. In 1985, American banks processed 40 to 45 billion checks, according to a Federal Reserve Board official — more than 66 times the number of electronic fund transfers.

Credit cards may be plastic, but everything else about them

Tenner is an executive editor at Princeton University Press.



TED PITTS

- The microchip as paper's best customer
- World's largest publisher: IBM
- It's too easy to copy, copy, copy

is paper: a bank copy, a merchant copy, one or two customer copies, three or four sheets of carbon paper, a monthly statement with return envelope — and a check.

Even in that paragon of postpaper planning, the research library, patrons are insisting on hard copy. They love the new electronic catalogs at the Library of Congress and the New York Public Library, where each terminal has its own printer.

The Rush Medical Library in Chicago, one of the few to disclose its paper consumption, used 188.2 linear miles of paper in its photocopy machines in the year 1982 to 1983 alone, the equivalent of more than 8,000 350-page 7- by 10-in. books. In the early 1980s, the library was also using more than 100 linear miles of paper in its thermal and computer printers and in printouts of its serials holdings.

As the library's director observes, "many libraries are now acting as printing presses for electronically stored information and as duplicators of printed materials."

WHY DID ALMOST nobody foresee that the microchip would be the best thing that has happened to paper since governments got people to accept the stuff as money?

Outside the library, academic paper use seems to be increasing even faster. Princeton University's computer center, for example, used 5,765,000 pages of letter-size laser paper in 1986, plus (including administrative use) 3,794 cartons of wide and 936 cartons of narrow green-bar impact printout paper — not to mention the paper used by the computer printers on campus. Harvard University's computer printers use more than 22.5 million pages a year, not counting the personally owned equipment of faculty and students.

It is evident that the more people use computers, the more they want old-fashioned printed information about them. Ten years ago, even before IBM thought of introducing microcomputers, its documentation sales reportedly made it one of the world's largest publishers. Today, two series of 15 to 20 volumes each of documentation are needed for the IBM Personal System/2 operating system alone.

For nearly all software, documentation and packaging account for the bulk of production costs. The inconvenience of photocopying manuals probably does more than any copy-protection software to deter software piracy. According to Communications Trends, Inc. in Larchmont, N.Y., computer magazine revenues will amount to $480 million in 1987, and professional and textbook revenues will be more than $300 million.

In hindsight

What went wrong with the assumption that electronics would take the place of paper? Why did almost nobody foresee that the microchip would be the best thing that has happened to paper since governments got people to accept the stuff as money? One reason may be that Americans have always been more conservative technologically than they have admitted to themselves, as the flop of metric conversion shows.

We have not begun to adopt, for example, any national videotex system like the British Prestel or the French Minitel, with each of its almost three million subscribers averaging nearly four minutes of daily use. (American services combined still have only about 750,000 subscribers). But in Europe, too, there seems to be no trend away from paper. At least some of the prophets of an Information Age made several mistakes.

First, they didn't take their own idea of an information explosion seriously enough. They thought of information as a fixed quantity and of electronic information as a simple replacement for the printed kind. Something different has happened. Computers — and microforms — are capturing much more information than was ever saved before, and they are storing it incredibly compactly.

One of the largest numbers in the world must be the bytes of information stored in all forms. Once, the inconvenience of clay tablets, stone slabs, parchment and even papyrus imposed a certain discipline, but no longer. Much less of our information is on paper than ever before, and much of it may never appear as hard copy.

But since the total is so high, even the occasional reproduction of a small part of it may bring a big jump in the number of pages actually produced. Even Ithiel de Sola Pool, who frowned on paper as a media "luxury" in *Technologies of Freedom* (1983), conceded that "the use of paper for display, reading and current work may grow."

Second, people have good reasons for craving their information on paper. Reading things on computer screens is relatively inefficient, about 20% to 30% slower than print, according to industrial psychologists. Charles Bigelow, who won a MacArthur Fellowship for his work as a computer-based type designer, has pointed out that current screen resolution of 60 to 75 dot/in. would have to be improved tenfold for excellent visual quality. This in turn would demand 64 to 100 times the storage of current office computers.

Even when high-end computer screens become as legible as mediocre print —

which won't be soon — paper will still be more secure. The cheapest newsprint may not fall apart for decades; a power surge from an air conditioner can wipe out a computer's memory in an instant.

This isn't a problem for organizations as such. They back up their accounts receivable and other vital records in bomb-proof vaults. Personal files may have no such protection. As employees do more computing, they will need — or think they need — more hard-copy backup. Nor is this just an American habit. The Japanese, the world's greatest connoisseurs and recyclers of paper, cram their offices with the stuff.

In fact, the security of hard copy isn't just habit. It's law. You can file federal tax forms electronically to get an early refund if your accountant has the proper IRS-approved software, but you'll still have to certify the electronic form with another one in writing.

THE SECURITY of hard copy isn't just habit. It's law. . . . You can't serve an electronic summons or present an electronic birth certificate.

You can't serve an electronic summons or present an electronic birth certificate. Licenses, passports, insurance policies, contracts, securities — the law nearly always demands a paper document, since more than a voltage spike is needed to wipe it out and more than a password to alter it.

Naturally, the more important a government transaction, the more paper the law seems to demand. Norman Augustine, vice-chairman and chief executive officer of Martin Marietta Corp., cites another aircraft maker's estimate that each time a new military airplane flew over the fence at his plant, paper accounted for 27% of its cost.

The federal procurement laws and regulations themselves, he also reports, fill 1,152 linear shelf feet; a single bidder for the C-5A transport aircraft contract submitted 1,466,346 pages weighing 24,927 pounds. Meanwhile, the Internal Revenue Service, charged with administering an 800-page tax simplification bill, employs a professional staff of 40 to do nothing but develop new forms.

Meanwhile, the gains of office work at the expense of manufacturing jobs have increased the number of document-generating people. In the electronics and electrical equipment industries alone, according to one publisher's study, production jobs fell from 1.35 to 1.24 million from 1984 to 1986, while white-collar jobs increased from 854,000 to 919,000. Even if each office worker's use of paper hasn't changed, more positions mean more paper used.

The copier era

But all these new workers are using paper differently, thanks not only to computers but to photocopiers. When Xerox Corp. introduced its 914 dry photocopier in 1959, one of America's leading industrial consulting companies estimated that no more than 5,000 machines would be needed in the whole country. Instead, office workers discovered that they could build up private files to reduce their reliance on others and that they could share their data and opinions with an almost unlimited number of colleagues.

At a community college where I taught in the 1970s, copies of the dean's authorization for my office key went to six other administrators, thanks to the photocopier. And once many people were able to receive information at the same time, they expected to. Collators, automatic document feed, two-sided copying — each advance in photocopying was made because more people expected to get more information, with each technological advance making the information easier to transmit.

The result: In corporate life, and to a greater extent in law and government, access to information means physical distribution of paper. *The Wall Street Journal*, citing a *Personnel Journal* study, reports that up to 70% of office workers' time is spent handling written material. In one growing suburban area, Fairfax County, Va., the monthly agenda distributed to each member of the board of supervisors weighs up to 20 pounds, not including the categories of papers that are not distributed with the main package.

Finally, paper is proliferating because electronics has blurred the distinction between original and copy. Until the mid-1970s, an editor receiving a professionally typed proposal could safely assume that the author had sent it to no more than a few others. It was too much work to type a dozen or more copies on speculation. With each new generation of electronic typewriter and form-letter software program, it became easier to spread letters of inquiry Johnny Appleseed style.

Laser printing may soon make academic the difference between master and duplicate. Already, it isn't always possible to tell a laser-printed original from a photocopy, and vice versa. A few laser printers actually double as photocopiers. And this surely means more "personal" and transparently personalized letters in the future. The cults of the $250 cigar-size fountain pen and the handwritten business note probably reflect the devalued sincerity of executive typewriting.

All these changes have something in

Continued on page 58

55 GOOD REASONS WHY

Being chosen Best Computer Newspaper in the third annual Computer Press Awards competition is an honor for *Computerworld*. And being runner-up for Best News Story/Computer Publication adds to that honor. *Computerworld*'s most valuable resource — its 55-person editorial staff — is what made it all happen. These professionals, representing the biggest staff in the industry, are the ones responsible for *Computerworld*'s winning performance. Thanks to their high journalistic standards, you get the 'Best Computer Newspaper' every week with *Computerworld*.

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Note: The third annual Computer Press Awards competition was held April 12, 1988, in New York. Co-sponsors of the competition are Citizen America Corp. and Computer Press Association.

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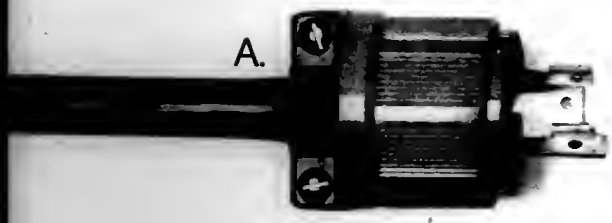

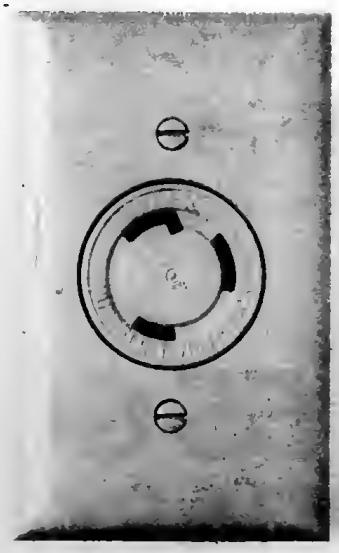

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Users can't escape paper

BY ALAN RADDING

In an informal survey, U.S. companies reported mixed success in their efforts to reduce the use of paper by relying more on computer systems. Paper use has decreased in some instances and increased in others.

In some cases, paper use has simply moved from one type of system to another. For instance, copier use has declined in one office, but there has been an accompanying increase in the use of laser printers, which are being used as copiers as well as printers. In other instances, decentralization of computer systems simply transferred paper consumption from MIS to end users.

• At Levi Strauss & Co.'s data processing center in Henderson, Nev., managers report a drastic reduction in paper use because workers now transmit reports electronically.

"We would print tons of reports here and mail them to the home office or to the field," says Mike McCullough, DP manager. The DP center relies on an IBM 4381 as its host.

Under pressure to get the reports into the hands of end users more quickly, McCullough's department began electronically transmitting the reports directly from the host to end-user offices, where the report would be printed out. "We weren't trying to reduce paper. The decision was based on the speed of delivery," McCullough says.

He adds that paper savings at the DP center are presumably offset by increased paper consumption at end-user sites. He does not know if there is a one-to-one correlation, however.

• "We're using more paper now despite trying not to do that," says William Chelmowski, DP manager at Krueger Ringier in Corinth, Miss. The problem is the company's decentralization. "We're seeing many more reports circulating than we ever saw before," he says. The reports are coming from remote computer sites.

In an effort to reduce paper, the company is adding on-line electronic systems to handle reporting and is moving to microfilm for some reports, Chelmowski says. But despite all this, paper use keeps mounting.

At the Corinth plant, the company supports 16 terminals and was relying on an IBM 3262 line printer. It recently added two dot matrix printers to handle the increased demand for printouts.

• Minnesota Mutual Life Insurance Co. in St. Paul, Minn., purposely set out to reduce paper by developing an in-house electronic forms publishing operation, says Beatta Schultz, senior office automation analyst.

The company handles from 2,500 to 4,000 forms per day electronically. These forms are no longer put on paper except for the final printed policy or invoice, which is sent to the customer.

The electronic system "significantly reduced our use of paper. It was part of the justification for buying the entire system," Schultz says.

Minnesota Mutual currently keeps 600 forms — mostly policies and certificates — on file electronically.

The company still maintains 90,000 cubic feet of storage for paper forms storage, Schultz says. The never-ending paper chase is perpetuated by the new products the company is adding, even as it transfers more and more old forms to the electronic system, she notes.

• United Information Systems, Inc., an office automation management consulting group, has given up the quest for a paperless office.

"We're creating more paper than ever," says Ron Abler, senior associate. With the introduction of desktop publishing and laser printers in the office, Abler finds that he and his staff are buried in iterations.

Minnesota Mutual's Schultz

"My wastebasket is filled with test copies," he says, adding that that is because he can now fiddle with the layout. In addition, he and his colleagues still prefer to read and edit draft reports on paper.

While paper use is up, the company's printing costs are way down. Instead of buying printed letterhead, "we're only using plain bond paper," Abler says.

United Information uses the desktop publishing system to print its letterhead onto the document along with the text itself. •

IN SOME CASES, paper use has moved from one type of system to another. Copier use has declined in one office, but there has been an accompanying increase in the use of laser printers.

Radding is a Boston-based free-lance writer specializing in business and technology.

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Bad news

CONTINUED FROM PAGE 55

common. Paper is flourishing not in spite of but because of electronics. Powerful microprocessors have made high-speed computer printing possible. A new $2,000 laser printer may have more kilobytes of storage than the computer that drives it.

Automated canceling and address recognition have saved the Postal Service from collapse, just as magnetic imprinting has allowed banks to handle oceans of checks. Whereas the original Xerox 914 was electromechanical, a new high-speed autofeeding, collating photocopier — the McCormick reaper of paperwork — is really a hybrid of camera and computer. The vast mailings of organizations from the Moral Majority to the Audubon Society to L. L. Bean would be unmanageable without sophisticated computer support. (In 1986, 44.7 billion pieces of bulk mail were sent in the U.S.)

Here to stay

There is every reason to think that electronics will drive, not drive out, print and paper as forcefully in the next decade as it has in the last. Satellite text transmission, which has made possible eight regional editions of *The Wall Street Journal*, four editions of the *The New York Times* and a national paper, *USA Today*, has brought same-day transmission of the London *Financial Times*. Typeset-quality laser printers may be within the reach of small businesses soon.

Dataquest, Inc., a market research and analysis firm in San Jose, Calif., estimates that close to 250,000 page-makeup software packages were sold in 1987. American offices bought 200,000 facsimile machines in 1986, and the market is expected to increase at an annual rate of 20% to 30% at least for the next several years. What of attempts to suppress paper files in offices? As author Pool observed, "When no paper files are kept because bulk storage of them is too expensive, a new paper copy may be derived from the bulk electronic files every time an item needs to be seen, and then that copy can be thrown away."

Meanwhile, the speed of change in electronic media will continue to make paper more important than it ever was before data storage. As a National Research Council report pointed out in 1985, we cannot assume that electronic records will be readable for a fraction of the 200- to 300-year life expectancy of acid-free paper. Information stored on tapes and floppy disks — and even on laser disks, it seems — degrades slowly but steadily.

As obsolescent hardware is scrapped, reading older computer records becomes a challenge. Some Vietnam-era tapes now can be read only by one or two working computers in the world. Today's laser-disk texts may fare no better.

Paper, by contrast, is robust. Future generations or beings, even if they can't read it at first, can stare at our texts while awaiting their Champollion. When paper starts to crumble, we can just microfilm it or photocopy it onto new paper; xerography, applied to old documents, may be the first information technology in history to yield a copy superior to the original. Even soaking paper, burning it or slicing it into ribbons may not erase its message for the determined, as the reassembled records of the U.S. embassy in Tehran attest.

THE SPEED OF change in electronic media will continue to make paper more important than it ever was before data storage.

What a compliment, then, the shredder is to paper's ubiquity and durability. The U.S. government buys several thousand shredders a year, according to a leading Washington, D.C.-area dealer, and industry spends another $60 million annually. Oliver North's infamous Intimus Model 007-S, a White House favorite, can cross-cut 60 feet of paper a minute into 7,500 pieces a sheet, and the conveyor-belt-fed Intimus 580E can digest a filled 3-in. loose-leaf binder. Yet paper is also more secure than conversation or electronic data bases; the kind of bugs that penetrate it will never tell.

Occasional winner

Sometimes electronic media does win over paper. Ninety percent of securities trades take place as electronic book entries — backed up, of course, by vaults of paper certificates. Recordings and photocopying have overwhelmed sheet-music publishing, already suffering from the piano's long-term decline and the educational computer's recent rise as a bourgeois totem.

Telephones seem to have endangered personal letters but, interestingly, not greeting cards. In offices, banks and libraries, bulky, obsolete, flammable stacks of wood-fiber sheets — including the soothsayers' dire prophecies for them — seem entrenched for a perpetual transitional decade. If the Soviet Union, as rumor has it, relaxes its fierce scrutiny of the photocopier, it will be the most fateful event in paper history since the invention of third-class mail.

We will refine the last barrel of oil — it takes the equivalent of at least 1,500 pounds of petroleum to make a ton of paper — before we cut the last pine. The computer, ironically, has turned us from pencil pushing to printout pumping. •

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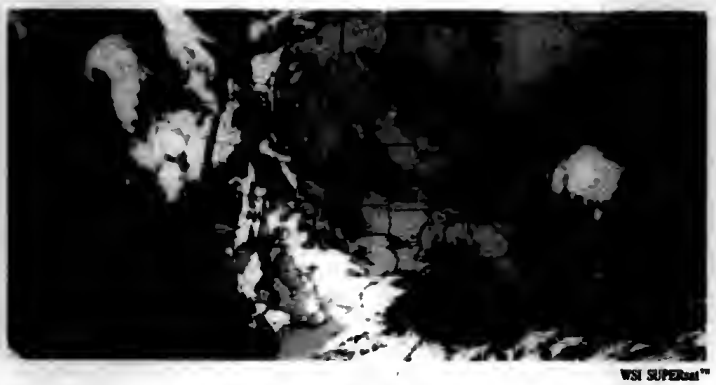

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TAKING CHARGE

James Connolly

Overcoming technophobia

Maybe it's a time to go fishing. Maybe it's time for MIS managers and the computer industry to give up on the idea of making people use computers. It just might be easier to learn the ways of the wily trout or — for those who don't like worms and flies — the country club's sand traps or the intricacies of needlepoint.

Some people just don't want to compute. The digital computer has been around for four decades, the typewriter for 120 years and the abacus since sometime after folks began their move from the cave to the condo.

Each generation of machines has had its advocates, and each generation has run into people who won't use them.

Well, it's 1988, and plenty of people still won't use computers. Some won't even use a typewriter. The evidence is in a recent study by Olsten Services, the Westbury, N.Y.-based temporary personnel agency that is a division of Olsten Corp.

Olsten found that despite the proliferation of desktop computers, most Fortune 1,000 executives still write in longhand. The most guilty parties are male executives older than age 40, a group in which only 13% compose letters on word processors. The study showed 29% of male executives younger than age 40 use that equipment.

Continued on page 60

CIO turnover on rise

Corporate rank, exposure seen as factors

BY JAMES CONNOLLY
CW STAFF

CHICAGO — A produce-or-get-out mentality has hit the senior levels of information management as chief information officers (CIO) have moved into more visible positions near the top of major companies.

One third of CIOs recently said their predecessors left their jobs via dismissal or demotion, while only 14% cited retirement as a reason for leaving, according to a survey by the Touche Ross & Co. accounting and management consulting firm.

Meanwhile, the percentage of information systems groups reporting to a chief executive increased from 26% to 34% between 1985 and 1987, reflecting the growing importance of MIS in corporations.

"One of the things we have to focus on is the tremendous turnover at the CIO level. More CIOs are reporting to the [chief executive officer], but they also are being held accountable," said Thaine Lyman, a Touche Ross partner.

Touche Ross surveyed 346 CIOs on human resource issues in major U.S. and Canadian companies.

Lyman and Touche Ross partner Raymond Bolek said that while information systems groups report to CEOs in an increasing number of companies, CIOs are in a different situation than their peers, such as chief financial officers. The CIOs are at a high level but are set apart by having to serve those other officers — providing those peers with the information and communications services that they need in order to do their jobs.

Lyman said the importance of information in industries such as insurance and financial services is a key reason CIOs rank so high in those areas. He said one reason relatively few information systems groups report to CEOs in manufacturing may be the ten-

Continued on page 60

Stepping closer to the top

More and more information systems groups are reporting directly to their chief executive officers

INFORMATION PROVIDED BY TOUCHE ROSS & CO.
CW CHART

Success in MIS via a circuitous career route

BY CLINTON WILDER
CW STAFF

PHILADELPHIA — To climb the data processing career mountain and reach the summit of MIS director, many aspiring computer professionals take a straight and narrow route within a company. But James Montgomery, vice-president of home office systems for Reliance Insurance Co., has chosen a wide-ranging path, and has seen much more of the landscape in the process.

Montgomery, 51, has been a vendor, user and manager of information systems in a career that has stretched from Washington's Puget Sound to Pennsylvania's Delaware River. In an age when MIS management in all industries is increasingly a strategic position, Montgomery's diverse career stops are a definite plus at Reliance, an insurance giant with 1987 premiums of $2.5 billion.

"Having that kind of experience brings a new perspective to your management style," said Bruce Wilkinson, Reliance's assistant vice-president for home office systems, who also worked for Montgomery at Reliance subsidiary United Pacific Insurance Co. outside of Seattle. "I think it helps to understand business in general. It really affects the kinds of resource decisions Jim makes, concerning both people and machines."

In Montgomery's career, he has done the following:

- Started, built and sold, not one, but two, software companies — one selling custom reinsurance software and the other a system for gemstone importers.
- Spent two years on the other side of the MIS fence as manager of a United Pacific customer service center.
- Worked in two MIS departments affected by corporate takeovers.
- And most recently, left the former data center he headed at United Pacific to become a somewhat smaller fish in a much bigger pond at Reliance.

That is not a bad record for a guy who never even graduated from college. Montgomery joined the U.S. Marines after high school and then attended night school while working as a software developer for a Los Angeles service bureau.

Montgomery believes his time as the United Pacific service center manager in Federal Way, Wash., in 1984 and 1985 was particularly valuable for his future understanding of the role of MIS in business.

Continued on page 61

PROFILE

James Montgomery

Position: *Vice-president of Home Office Systems, Reliance Insurance Co.*

Philosophy: *To make MIS serve its customers more efficiently by making information available to those who need it.*

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Connolly

FROM PAGE 59

Older female executives use word processors more than younger women by a margin of 26% to 21%.

On the positive side, Olsten, which conducted the study in conjunction with an annual corporate spelling bee competition, found that spelling and writing skills are particularly important to young executives.

But — descendants of Gutenberg and the Websters can cringe at this point — 21% of the male executives older than 40 don't have a dictionary or any other reference book in their office.

If so many executives seem reluctant to crack a book or touch a keyboard — apparently preferring the inefficient route of dictating letters and memos to a busy and expensive executive secretary — is there any reason to think they will get serious about utilizing executive support systems or electronic mail?

Should MIS managers pack their bags and grab their fly rods? Only if they strive for companywide appreciation of their efforts.

MIS managers must recognise that some people won't use the tools they are given. Some of the executives who want their companies to be productive in the 1990s have personal work habits reminiscent of the 1890s.

Therefore, MIS managers must not only humor everyone, but focus on clients who want to grow.

The alternative would be a lifetime of golden sunrises over mountain lakes, rather than the luxury of barking executives, overpriced lunches and airport delays. That sounds like a tough choice.

Connolly is *Computerworld's* senior editor, management.

CIO turnover

FROM PAGE 59

dency to have both commercial computing groups and manufacturing systems groups report to the chief operating officer.

The turnover figures that showed CIOs being dismissed or demoted, rather than quitting, placed the CIOs in contrast with their own staffs.

"Our survey revealed that offers of higher salary and more responsibility are the most frequently cited reasons for staff turnover. In order to retain quality information systems staff, corporations will have to offer them higher salaries. This means the salary structure may escalate," Bolek said. Lyman added that companies not only have to pay well but must provide MIS professionals with an environment that challenges the workers and makes them feel part of a team.

Lyman and Bolek also pointed out a flaw in salary structures. They found that although most CIOs use formal performance evaluation to rate their employees, raises are not always based on performance. With most raises clustered in the range of 4% to 6%, good performance is not necessarily rewarded, leading CIOs to advocate MIS pay structures that are independent of the rest of the company.

The consultants found that most of the CIOs plan to concentrate on holding on to a small cadre of talented people, rather than hiring hordes of mediocre workers. The CIOs said the skills most in demand now are those designed to integrate disjointed applications, but that during the next five years, their emphasis will be on training for skills related to new projects, such as artificial intelligence, fourth-generation languages and image processing.

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MIS success

FROM PAGE 59

"What I did there had nothing whatsoever to do with information systems or data processing," he said with a smile, "and I enjoyed the hell out of it. I'd recommend that to almost anyone. Most people in MIS really don't understand the significance of the service that [business] gets from MIS."

Montgomery had been an applications planning consultant at United Pacific for two years before making that intracompany career switch, which certainly did not hurt his MIS career. When Montgomery returned to the data center three blocks away in May 1985, it was as United Pacific's vice-president of information systems.

He remained in that position until last year, when Reliance decided to consolidate most of United Pacific's information processing in Philadelphia. The decision was ironic for Montgomery, who ended his first United Pacific stint in 1969 after Reliance, headed by New York financier Saul Steinberg, acquired United Pacific.

"At that time, it looked like they would consolidate, so a lot of us left," he recalled. "I came back in 1982, figuring that since they hadn't consolidated by then, they wouldn't. But they did."

The consolidation brought two immediate challenges for Montgomery: administering the paring down of the United Pacific data center and adjusting to new duties 3,000 miles away.

At Reliance, Montgomery is responsible for all corporate systems, except field processing; his charter includes the information center, financial systems and management information systems.

One of his first orders of business is planning Reliance's transition to IBM's DB2 relational architecture, with which it hopes to gain a nationwide competitive advantage.

To support the software, Reliance has installed a new IBM 3090 Model 200E and plans to add two more Model 200Es or a 3090 Model 400E in the next 18 months.

Information vendors

"There's a lot of data duplication now, and it can be difficult to get to information," Montgomery said. "Our role [in MIS] has changed from developing reports to making information available to those who need it."

In order to set up Reliance's data base architecture to achieve that goal, Montgomery said it is critical to get out of the glass house and learn the business of Reliance firsthand by interviewing senior executives.

"I need to know what they need to manage their part of the business," he said. "If underwriters in the field can ask the system about the performance of independent agents, they can fine-tune the operation as they go. But that information needs to be readily available."

Married, and father of a 13-year-old daughter, Montgomery has found a suburban home in the aptly named Montgomery County. He will miss Puget Sound, but plans to keep his waterfront vacation home there. "It's only eight stairs from the house to the boat," he said.

Montgomery has earned a reputation as a hands-on people-oriented manager, and it stems from something he learned as a technically savvy businessman. "MIS and its customers need to spend more time together," he said. "That's something I've always worked on, but I don't know if it will ever be good enough."

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INDUSTRY INSIGHT

Clinton Wilder

Battling for MIS clientele

When one thinks of "hot" areas in which to make money in the computer industry, thoughts like Unix, multivendor connectivity, expert systems and computer-aided software engineering might come to mind. But none may be hotter than the business of advising MIS executives and their bosses on how to plan a competitive information systems strategy. It's called consulting.

Two weeks ago, one of the largest providers of such information systems advice went through a major upheaval; one that has the potential to change the direction of the firm and possibly its industry. Yet this event may have gone unnoticed by many MIS executives, because the unlikely "vendor" was Big Eight accounting firm Arthur Andersen.

Arthur Andersen's revenue from consulting accounts for 38% of its nearly $1 billion total, and a huge chunk of its consulting fees come from information systems-related consulting. Although exact figures aren't available, there is no question that the Chicago-based firm has become a prominent computer industry player very quickly.

Furthermore, Arthur Andersen's consulting business is growing at a much faster rate

Continued on page 64

VM Software joins buy-out game

Will acquire Systems Center for $16 million to enter networking arena

BY NELL MARGOLIS
CW STAFF

RESTON, Va. — Wedding bells will ring in August for VM Software, Inc. and the Systems Center, Inc., located in Irving, Texas, the companies jointly announced last week.

The $16 million stock-for stock acquisition — VM Software's first — will launch the seven-year-old systems software developer across a widened range of IBM operating systems and into the rapidly growing market for networking software, said company President Richard L. Earnest. At the same time, he said, it will boost the Systems Center into the international market and graft its 300 customer sites to the acquirer's site list of approximately 2,600, with concomitant gains in sales and marketing expertise.

VM Software makes and markets a line of software utilities geared to wring maximum efficiency out of IBM's VM operating system. The System Center's Network Data Mover software line effects bulk transfers of data across hardware platforms and operating systems in an IBM Systems Network Architecture (SNA) network.

Finding MVS and SNA expertise at the Systems Center was tantamount to discovering it in VM Software's own backyard, Earnest said. VM Software Chairman Robert Cook has been a member of the privately held, venture capital funded company's board of directors for several years.

Last week's move positioned VM Software for further acquisitions, said Gary Hromadko, an analyst with Robertson, Colman & Stephens in San Francisco. Until now, he said, "Bob Cook has been defining the company as being in systems administration." If the merger — now pending approval from VM Software shareholders — closes, "they'll be a lot broader than that." Networking and a range of IBM operating systems, said Hromadko, will provide the company with a base from which to strategically spread.

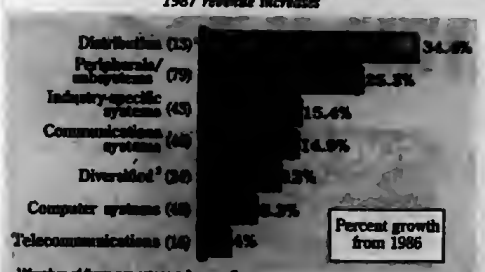
More muscle in a larger market, not disappointing financial results in 1987, spurred VM Software to take its first step down the acquisition road, according to Earnest. "The difficulties that we had last year were a result of the slowing of the mainframe market," he said.

Under the terms of the proposed merger agreement, the Systems Center will become a wholly owned subsidiary of VM software.

Data View

CPU growth lags

Computer systems trail most other hardware segments in 1987 revenue increases



[1]Number of firms per category in parentheses
[2]Refers to firms deriving revenue from more than one category

INFORMATION PROVIDED BY BROADVIEW ASSOCIATES
CW CHART

Plus, Cipher defend patents

BY JAMES A. MARTIN
CW STAFF

SAN FRANCISCO — Two patent infringement lawsuits were filed recently by California-based microcomputer peripheral companies.

Quantum Corp. in Milpitas and its subsidiary, Plus Development Corp., filed suit last week against Irvine-based Western Digital Corp., alleging that Western Digital's hard-disk add-in card infringes on patents covering similar technology developed

Continued on page 66

NEC shifts legal gears in Intel suit

BY JAMES A. MARTIN
CW STAFF

PALO ALTO, Calif. — The critical issue in the long-running NEC Electronics, Inc. va. Intel Corp. microcode trial is not whether microcode can be copyrighted, but the legal validity of developing microcode in a so-called clean-room environment, NEC attorneys said last week.

"If the judge rules that our clean-room microcode development is a valid way to create microcode, then we'll know this method is safe — something we don't really know now," said NEC attorney Douglas Derwin at a NEC-sponsored press briefing here.

"It would give the industry a set of rules as to what information a developer can have when creating in a clean room and what information the developer cannot have," he added.

Such a ruling would also, in effect, subordinate NEC's claim that a large portion of microcode is generic and, thus, should not be copyrighted. NEC hopes to convince presiding U.S. District Judge William P. Gray that the V series microcode NEC developed in a legal clean-environment closely parallels the original V series microcode, which was not developed in a clean room and is at the center of the Intel-NEC dispute. Intel claims that NEC's original microcode violates Intel's copyrights for its 8088 and 8086 microcode.

In legal terms, the clean room is a heavily controlled area in

Continued on page 66

Corporate users at a crossroads in micro decision-making

BY KATHY CHIN LEONG
CW STAFF

SAN JOSE, Calif. — Unlike in years past, large users are at a serious crossroads in their microcomputer decision-making, a microsystems analyst said at an industry gathering here last week.

"Last year, users were content with MS-DOS. Now you have the OS/2 and a variety of bus architectures. The decision of what to buy is more difficult than ever," said David Carnevale, vice-president of microsystems at Infocorp, a Cupertino, Calif., market research firm.

With hopes of determining what users want and why they want it, more than 200 personal computer executives seemed pleased to hear at the conference that IBM, Apple Computer, Inc. and Compaq Computer Corp. are not the only ones that hold the purse strings when it comes to wooing corporate America.

Although much noise surrounds the IBM Personal System/2, market figures show that IBM Personal Computer success has fallen, indicating that users are willing to go with other alternatives. IBM's share dropped from 44% in 1986 to 33% in 1987, and Apple has held steady at 13%, according to a recent Infocorp survey. "Where the fragmentation [for the remaining percentage] has been is in the IBM PC-compatible market," InfoCorp analyst Stella Kelly said.

Certain micro vendors have had proven success by targeting specific users. Andrew Czernek, a Zenith Data Systems, Inc. vice-president of marketing, said the Glenview, Ill.-based firm has gained a foothold in the micro arena by focusing on such niches as government and education. Zenith makes the official PC product for the Department of Defense and has won large contracts with the Internal Revenue Service, the Department of Health and Human Services and the Department of the Treasury.

Filled the void

Additionally, Zenith made strides with universities because Apple lacked the professional tools and languages such as Cobol and Fortran, Czernek said.

Users want an open computing platform, said Robert Kavner, the new president of AT&T Data Systems. Kavner stressed that users do not want to feel locked in to a dedicated vendor environment but want to focus their creative resources on building applications. "America is spending a ton of money to work around the industry's proprietary platforms," he said.

There are still vendors that are carefully following IBM's tracks and are anxious to get IBM clones, particularly the IBM PS/2 Micro Channel look-alikes, out their doors. Understanding the nature of IBM's patents could help computer makers more easily clone a PS/2 by knowing what legal mine fields to avoid, said Robert E. Patterson, a Palo Alto, Calif.-

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Wilder

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than its traditional audit business — and therein lies the source of the recent upheaval.

According to published reports, Arthur Andersen's top brass believed that Gresham Brebach, the partner in charge of consulting, was planning to bolt from the firm and take part of the consulting practice, along with employees and clients, with him.

Brebach was relieved of his duties as head of consulting and is expected to leave Arthur Andersen, although he has denied planning to siphon off the firm's client base.

But if he does depart — and does indeed start a new consulting firm to woo Arthur Andersen clients — the battle for MIS customers could be a big part of the war.

Arthur Andersen's information systems consulting clients are a Fortune 500 Who's Who. Everything about the firm's MIS consulting is "big": big training budgets and facilities, big staff, big clients, big systems integration and strategic systems consulting projects.

And yes, big profits. Although such matters are kept tightly under wraps, observers unanimously say that Arthur Andersen is making a bundle in MIS consulting — and investing heavily in an effort to make more. This is at a time when the Big Eight audit business is no longer a growth industry.

Late last week, a virtually identical dispute came to light at fellow Big Eight firm Arthur Young — this one in court. Arthur Young sued two recently fired partners from its Chicago office for breach of contract, claiming they planned to leave the firm to solicit employees and clients for a competing venture in — you guessed it — consulting.

When big bucks are at stake, big disputes can arise (just ask Apple and Microsoft). Very big bucks are at stake in information systems consulting, and what's brewing at Arthur Andersen and Arthur Young bears watching.

Wilder is *Computerworld's* senior editor, computer industry.

INDUSTRY WEEK IN BRIEF

Thirty-seven employees at Corvus Systems, Inc. have been handed a mandatory 30-day leave of absence, the struggling networking firm recently announced. "We deeply regret this action, but it is necessary to balance our work force against our sales and our cash flow resources," said Lewis T. Lipton, president and chief executive officer at the San Jose, Calif., firm in a prepared statement.

Former Management Decision Systems, Inc. head Jay Wurts has been named chief executive officer and chairman of the board at Cambridge, Mass.-based Symbolics, Inc. In February, Symbolics cofounder Russell Noftsker left a similar position at the troubled artificial intelligence workstation maker following a management shakeup, and Vice-President of Operations Ronald Darry has been serving an interim term since then.

Computer-aided software engineering products maker Index Technology Corp. has filed a registration statement with the Securities and Exchange Commission for an initial public offering of 1.6 million shares. The Cambridge, Mass., firm said it plans to sell stock for between $10 and $12 per share.

Past hostilities have apparently ended between IBM System/36 and 38 peripherals maker Decision Industries Corp., parent of Decision Data Computer Corp., and leasing firm Econocom International N.V. The two companies announced a joint marketing agreement last week under which Econocom will offer Decision Data customers lease financing through Decision Data's sales force. Decision Industries fended off a hostile takeover bid from Econocom last year by accepting a white knight offer from Onset Corp.

Mellon Datacenter, the processing services unit of Pittsburgh's Mellon Bank Corp., has agreed to acquire Backroom Systems Group, a Monroe, N.C.-based maker of bank operations automation software. Backroom Systems Group recorded sales of $3.4 million in 1987.

President Reagan awarded Compaq Computer Corp. President Rod Canion the U.S. Department of Commerce's "E" Award at a ceremony last week in the White House Rose Garden. First established during World War II, the award recognizes companies for continued growth in their volume of exports. Overseas sales made up nearly one-third of Compaq's 1987 revenue.

Another Houston-based firm, Pertran software developer IMSL, Inc., also received the "E" award. IMSL received 41% of its revenue from foreign markets in 1987.

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NEC

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which, in this case, NEC's microcode developers were denied access to the Intel microprocessors that they were attempting to reverse-engineer. NEC developed a clean room environment to prove that most microcode is similar by nature and that NEC did not copy Intel's microcode.

Major question

But Intel attorneys have maintained that the clean-room question will not be tried unless NEC loses on the big question still to be determined — whether microcode can be considered intellectual property and, thus, copyrighted.

"The clean-room code may be used as evidence on whether there is only one way to write the code or not," said Tom Dunlap, vice-president and general counsel for Intel. "As far as the infringement issue, that is going to be tried later, around August, after the copyright question."

To further bolster its case, NEC plans to emphasize testimony from Dr. David Patterson, a University of California at Berkeley professor hired by Intel as an expert witness.

Patterson asserted that microroutines — electronic signals that carry out a particular function of the microcode — often can only accomplish a specific task in one way, thus creating inevitable similarities between microcodes designed for like microcomputers.

Not over yet

The NEC-Intel trial is scheduled to resume June 14 in the San Jose, Calif., U.S. District Court. NEC originally filed suit against Intel on Dec. 21, 1984, seeking to have Intel's 8088 and 8086 microcode copyrights declared invalid.

Intel countersued Feb. 25, 1985, claiming NEC's V series microcode infringed on Intel microcode.

On Sept. 22, 1986, then-presiding Judge William A. Ingram ruled that microcode can be copyrighted and that Intel's copyright is valid, but had yet to rule on whether NEC had infringed on Intel copyrights.

Ingram later disqualified himself and nullified his decision, sending the case back to square one. Gray was assigned to the case in January 1988.

Asian firms squabble

In what is considered to be the first public friction between Japanese and South Korean semiconductor makers, Hitachi Ltd. in Tokyo has accused Samsung Semiconductor and Telecommunications Co. of illegally copying Hitachi's patented memory chip technologies.

Hitachi is demanding that Samsung pay royalties on the dynamic random-access memory chips that Samsung exports to the U.S., claiming that the Seoul-based company is unlawfully using Hitachi's patented dynamic RAM manufacturing process.

Analysts said Hitachi's accusations against Samsung are ironic, since Japanese companies have been the target of repeated allegations that they unlawfully use U.S. patents and copyrights on chip technologies. Several Japanese companies have said in the past that the U.S. has unfairly targeted the Japanese.

The two companies are said to be in the process of negotiating a settlement.

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Users

FROM PAGE 63

based attorney specializing in technology.

Still, copying a PS/2 without IBM's consent is easier said than done. "It's easier to take apart the Micro Channel for reverse-engineering purposes than it is to put it back together," Patterson said.

Despite flashy or successful cloning technology, vendors will have to pay closer attention to the business needs of users. The falloff in popularity of certain software applications is a prime example.

> "IT'S EASIER to take apart the Micro Channel . . . than it is to put it back together."
>
> ROBERT E. PATTERSON
> ATTORNEY

Despite recent hoopla over the future of presentation graphics software, the market for such packages is still in a "missionary" phase, according to Bill Higgs, Infocorp's director of software research.

"Since 1981, presentation graphics has been predicted to be the next boom area in applications, but it hasn't happened," Higgs said.

Presentation graphics programs, which are drawing tools and packages used to develop color slides, have yet to catch on because users are not convinced of the need for them.

Staff members Julie Pitta, James A. Martin and Stephen Jones contributed to this report.

Suits

FROM PAGE 63

by Plus.

Separately, Cipher Data Products, Inc. in San Diego has announced it has filed suit against Costa Mesa, Calif.-based Archive Corp., claiming Archive infringed on its patents on ¼-in. cartridge backup tape drives.

The suit, filed in U.S. District Court here, claims Western Digital violated a Quantum patent covering a wedge-servo disk architecture used in its hard disk drives as well as a Plus patent on its Hardcard add-in board.

At press time, Western Digital was preparing a formal response to the lawsuit.

Quantum has successfully defended its wedge-servo patent in the past, suing Chatsworth, Calif.-based Computer Memories, Inc. for $6 million in 1986. The company sued NEC Corp., NEC Information Systems and Mountain Computer, Inc. in 1987 and received a $3 million settlement.

Archive has countersued Cipher, challenging the validity of Cipher's patents.

In 1986, Cipher sued Wangtek, Inc. in a similar patent infringement case, currently in court. Cipher's ¼-in. tape drive patent was issued in February 1986 and reissued in June 1987, according to the company.

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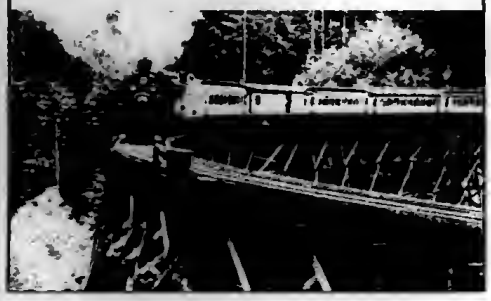

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COMPUTER CAREERS

The view from BUNCH shops

Non-IBM compatible shops have fewer opportunities but less competition

BY JANET MASON
SPECIAL TO CW

Art Heaton, a senior programmer/analyst at Charming Shops, Inc. in Bensalem, Pa., is one MIS professional who has maneuvered himself from a Unisys Corp. environment to his present position in an IBM shop. While most of his colleagues were content with their non-IBM-compatible mainframe skills, Heaton decided to move into the IBM arena to broaden his choice of potential employers.

Like many others with non-IBM-compatible backgrounds, he found the move far from easy, but a boost to his career. He now has four years of IBM experience under his belt. "There is no question that I made the right decision," he says.

Companies will long be using non-IBM-compatible mainframes, most of which carry one of the names collectively formerly referred to as the BUNCH — Burroughs Corp., Univac (Sperry Corp.), NCR Corp., Control Data Corp. and Honeywell, Inc.

But some of the BUNCH manufacturers have been struggling lately, reflected in the mergers of Burroughs with Sperry, forming Unysis, and Honeywell's computer operations with France-based Groupe Bull. Furthermore, many BUNCH users are converting to IBM systems.

Robert Tannura, vice-president of executive search services with Chicago-based Wood/Sprau/Tannura, Inc., cites a major Chicago retailer and financial institution among those converting to IBM to take advantage of the packaged software applications that do not run on BUNCH mainframes.

Decline in popularity

BUNCH systems accounted for a relatively steady 25% of U.S. mainframe installations from 1982 to 1985 but slipped to 24% in the following two years, according to Donald Bellomy, a senior consultant at International Data Corp. in Framingham, Mass.

"The opportunities of IBM over the BUNCH shops are 15 to 1," says Burt Israel, a manager with recruiting firm Robert Half International, Inc. in Hartford, Conn. Israel says the Digital Equipment Corp. environment is second only to IBM in scope of career opportunities, ahead of all BUNCH installations.

The difficulty in moving from a BUNCH background to IBM, according to Israel, lies more in the perception of companies than in retraining workers. "In my point of view, this attitude limits the company, because the individual has unique abilities, talents and skills even if he doesn't have an IBM background," he says.

> THE DIFFICULTY in moving from a BUNCH background to IBM, according to one recruiter, lies more in the perception of companies than in retraining workers.

Both Israel and Tannura suggest that professionals with a BUNCH background become harder to place in an IBM environment as their technical skills become more entrenched, so they advise switching to IBM early — as Heaton did with five years of BUNCH experience — or planning to retire in the BUNCH environment.

BUNCH advantages

This is not to say that people working in BUNCH environments have to switch to IBM. First, pay is generally comparable. Furthermore, there is often less competition for jobs with BUNCH users. Steven Joffe, vice-president of San Mateo, Calif.-based recruiting firm Source EDP says, "Many of the people working for BUNCH users want to get out, so a person who knows a system well and plans to stay in the field has an advantage."

Many BUNCH companies, Joffe adds, hire someone after interviewing only several candidates, compared with the hordes who sometimes pass through the hiring process of IBM shops.

He also points out that the makers of BUNCH computers have certain strongholds, such as Unisys in government and related industries and CDC in scientific and engineering organizations.

But those who work in BUNCH environments and need to change companies are more likely than their IBM counterparts to relocate, Joffe says. "Because there are fewer BUNCH companies, they relocate on a higher percentage basis."

Companies that use BUNCH systems tend to retain their MIS employees longer because of the lack of competition, Tannura says. "These employees have job security in their companies, but they don't have the choice to go elsewhere," he says.

In theory, when someone moves beyond the programming ranks into systems analysis and design, he can more easily transfer his abilities to an IBM environment. However, says EDP's Joffe, "As people move up the ladder, the competition is much heavier, and companies are more likely to stick with people from an IBM background."

Trading skills for training

To avoid facing a limited career path, many people from BUNCH backgrounds position themselves in companies where they can learn IBM systems. Charming Shops' Heaton offered his Unisys skills to a consulting firm in return for eventually being trained on an IBM system.

Others find that expertise with a particular application provides their entry to the IBM world. Israel placed a woman boasting an eight-year NCR background in the banking industry with a large insurance company that needed someone skilled in mortgage and loan applications. "The driving force was her ability to understand the application and the end users," Israel says. "The company sent her to some basic IBM courses and trained her on their system."

Tannura advises BUNCH professionals interested in switching to IBM to find a company planning to convert to IBM and offer it BUNCH skills in return for being trained in IBM systems.

Mason is a Philadelphia-based freelance journalist.

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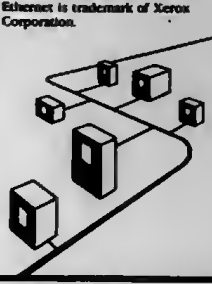

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Staff Director
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MARKETPLACE

New technology, new demand

IBM's OS/2 expected to make dent in DOS-based machine demand

BY CAMERON HALL
BOSTON COMPUTER EXCHANGE CORP.

Although the most requested computers in the IBM and compatible markets on the Boston Computer Exchange are still the DOS-based machines, it is becoming clear that the emerging applications possible under OS/2 are creating demand in both individual and corporate environments for equipment able to run this operating system.

Even these buyers, though, are operating in the "oldies but goodies" market as they request IBM Personal Computer ATs and Compaq Computer Corp. 286s rather than the IBM's Personal System/2.

The market was quiet during the week ending May 20, as the buzz of anticipation over Comdex/Spring '88 announcements settled as buyers and sellers thought about their next moves.

On the IBM floor, the PC AT Model 339 closed down $50, at $3,450. The XT Model 089 was down $50 to $1,550 after the previous week's downward pressure on prices brought sellers to the market for a quick sale. In addition, the PC XT Model 086 closed down $25, at $1,150, under favorable supply conditions.

The IBM PS/2 Models 50 and 60 have been receiving increasing interest from buyers beginning to look for PS/2s. The two models closed at $2,400 and $2,600, respectively.

The Mac SE has taken over as No. 1 in requests in the Apple Computer, Inc. market over the Macintosh Plus, with 20-MHz SE buyers waiting for supply at the recent high of $2,450. Those looking for the Plus found them down slightly at $1,075. The Mac II market is looking for sellers at $4,025.

The Compaq market was strong all week with steady demand. Trading of Deskpro 386 models was thin during the week — the model closed at $3,975 — and Deskpro 286s closed at $2,350, with both models experiencing downward price pressure from new discounted sales.

The Boston Computer Exchange can be reached at 800-BOCOEXX or 617-542-4414 in Massachusetts.

The BoCoEx Index

Closing prices report for the week ending May 20, 1988

	Closing price	Recent high	Recent low
IBM PC Model 076	$850	$850	$550
XT Model 086	$1,150	$1,200	$875
XT Model 089	$1,550	$1,600	$1,100
AT Model 099	$2,300	$2,425	$1,750
AT Model 339	$3,450	$3,500	$2,625
PS/2 Model 50	$2,400	$2,500	$2,225
PS/2 Model 60	$2,600	$2,600	$2,475
Compaq Portable I	$625	$800	$525
Portable II	$2,275	$2,375	$1,850
Deskpro 286	$2,350	$2,425	$1,825
Deskpro 386	$3,975	$4,000	$3,675
Apple Macintosh 512	$725	$775	$575
512E	$925	$1,025	$650
Plus	$1,075	$1,100	$810
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Copies of the RFP will be available for distribution on May 24, 1988, in Rm. 610, 250 Broadway, New York, N.Y. 10007. Proposals must be submitted to the Authority in the form specified in the RFP, by 4:30 P.M. on June 21, 1988.

Inquiries should be directed to Mr. Robert Dean, Esq., Deputy General Counsel, Rm. 623, 250 Broadway, New York, New York 10007, (212) 306-4580.

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A proposers' conference will be held at 10:30 A.M. on Monday, June 20, 1988, in the 6th floor conference room, at 250 Church Street, New York, N.Y.

Proposals will be received by New York City Human Resources Administration/Department of Social Services until 5 P.M. on Monday, July 25, 1988.

MISSISSIPPI CENTRAL DATA PROCESSING AUTHORITY

Sealed proposals will be received by the CDPA, 301 N. Lamar St., 301 Building, Suite 508, Jackson, MS 39201 for the following equipment and services:

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Request for Proposal No. 1374, due Wednesday, July 13, 1988 for the acquisition of a distributed processing system to address the departmental needs of the STATE FISCAL MANAGEMENT BOARD and affiliated departments, bureaus and offices. $10.00 charge.

Detailed specifications may be obtained free of charge from the CDPA office or at the specified cost by submitting a written request accompanied by the appropriate payment. NOTE: Valid forms of payment are corporate check on a Mississippi bank, certified check or POSTAL money order. NO CASH OR OUT-OF-STATE CHECKS. The CDPA reserves the right to reject any and all bids and proposals and to waive informalities.

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Request for Proposal No. 1389, due Wednesday, June 1, 1988 at 3:30 p.m. for the acquisition of four local area networks for the OFFICE OF THE STATE AUDITOR. Charge $10.00.

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1988 Computerworld SPOTLIGHT Sections

Issue Date	Spotlight Topic	Ad Closing	Trade Show Distribution
Jan. 11	Terminals & Terminal Emulation Products	Dec. 24	
Jan. 25	LANs	Jan. 8	Communication Networks
Feb. 8	DEC-compatible Software	Jan. 21	Uniforum
Feb. 29	Performance Management/ Capacity Planning	Feb. 12	
Mar. 14	DBMS	Feb. 26	
Mar. 28	Micro-to-Host Links	Mar. 11	WCC/Interface
Apr. 11	PCs (IBM-compatible)/ Portables/Laptops	Mar. 25	
Apr. 25	Electronic Publishing	Apr. 6	
May 9	Printers	Apr. 22	Comdex Spring
May 23	Data Communications	May 6	
June 6	CASE	May 20	
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July 11	Disaster Prevention & Recovery Products & Services	June 24	
July 25	Productivity Software	July 8	
Aug. 8	TBA	July 22	
Aug. 29	DB2 Market	Aug. 12	
Sept. 19	Hardware Roundup: Large, Medium Scale & Special Purpose Systems	Sept. 2	
Sept. 26	Hardware Roundup: Small Scale Systems	Sept. 9	TCA
Oct. 3	Hardware Roundup: Personal Computers & Workstations	Sept. 16	
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Oct. 31	Unix	Oct. 14	
Nov. 14	TBA	Oct. 28	Comdex Fall
Dec. 5	LANs	Nov. 16	
Dec. 19	IBM-compatible PCs/PS2 Market Products/Monitors	Dec. 2	

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IN COMPUTERWORLD SPOTLIGHT

Evaluating and specifying products and services for purchase is no easy task. And it's even more difficult when new products and vendors are frequently entering the market. But *Computerworld* makes the buying process easier for you with *Computerworld* Spotlight.

Spotlight is a series of pullout sections within *Computerworld*, each focusing on one product category. With 24 Spotlight sections in 1988, you'll get the purchasing specifics you need for PCs, LANs, printers and productivity software — to name just a few. Each Spotlight contains quick reference specification charts that compare products on a feature-for-feature and dollar-for-dollar basis. Plus related editorial on real-life applications, interviews, vendor viewpoints and market trends. And since it's a pullout section, you'll be able to save and refer to this information as you need it.

If you're involved in buying products, *Computerworld* Spotlight is the section you'll be turning to throughout 1988. And if you're marketing computer products in any of the Spotlight categories covered, you should be putting your message where your market is. Our schedule of 1988 Spotlight topics is listed at the left for your reference.

COMPUTERWORLD

An IDG Communications Publication

COMPUTERWORLD

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Aug. 8	IBM Midrange Software (System 3/X)	July 22
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Sept. 26	Hardware Roundup: Small Scale Systems	Sept. 9
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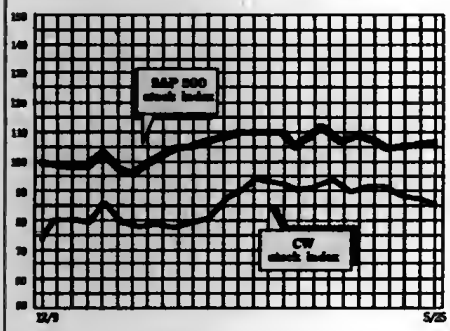

Indexes	Last Week	This Week
Communications	93.8	93.9
Computer Systems	97.4	97.1
Software & DP Services	95.4	93.6
Semiconductors	65.4	59.2
Peripherals & Subsystems	79.5	79.6
Leasing Companies	117.8	120.7
Composite Index	86.9	85.6
S&P 500 Index	105.0	106.0

Communications

Computer Systems

Software and DP Services

Semiconductors

Peripherals and Subsystems

Leasing Companies

Computerworld Stock Trading Summary

CLOSING PRICES WEDNESDAY, MAY 29, 1968

EXCH	52-WEEK RANGE (1)		PRICE CLOSE MAY 28 1968	WEEK NET CHNGE	WEEK PCT CHNGE
Communications and Network Services					
N AMERICAN INFO TECHS CORP	100	74	87.38	1.1	1.8
O ANDREW CORP	18	11	15.00	0.6	3.4
O ARTEL COMM CORP	3	1	1.50	-0.1	-7.7
N AT&T	36	20	26.13	0.1	0.6
O AVANT GARDE COMP INC	6	2	2.50	-0.1	-3.1
O AVANTEK INC	17	6	7.00	-0.8	-3.4
N AYDIN CORP	68	18	16.63	-0.8	-3.7
N BELL ATLANTIC CORP	60	61	69.00	3.8	6.5
N BELLSOUTH CORP	44	29	39.63	0.8	2.3
O COMPRESSION LABS INC	6	2	3.63	-0.1	-3.3
O COMPUTER NETWORK TECH	6	1	1.38	0.0	-3.4
O CONTEL CORP	40	29	31.00	-0.4	-1.0
O DATA SWITCH CORP	10	4	7.00	0.0	0.0
O DIGITAL COMM ASSOC	49	20	31.75	0.0	0.0
O DYNATECH CORP	69	14	19.50	-0.8	-3.7
O FIBRONICS INTERNATIONAL INC	7	2	3.00	-0.1	-4.9
O GANDALF TECHNOLOGIES	10	6	7.00	0.5	7.7
O GENERAL DATACOMM INDS	13	3	3.63	0.6	7.4
N GTE CORP	49	29	35.25	1.4	4.1
O INFOTRON SYS CORP	14	6	12.75	-0.6	-1.8
N ITT CORP	66	42	46.63	1.9	3.8
N M A COM INC	18	7	9.63	0.1	1.8
O MCI COMMUNICATIONS CORP	16	6	13.63	0.0	0.0
O MICOM SYS INC	17	7	15.25	0.1	0.6
O NETWORK SYS CORP	13	7	9.63	0.1	1.9
N NORTHERN TELECOM LTD	24	14	16.50	-0.3	-1.8
O NOVELL INC	30	13	23.25	0.5	2.8
N NYNEX CORP	75	58	62.50	1.1	1.8
N PACIFIC TELESIS GROUP	34	23	38.25	1.0	3.5
N PARADYNE CORP	6	4	4.25	0.1	3.0
A PENRIL CORP	5	1	4.38	-0.1	-2.8
N PLESSEY PLC	29	23	28.75	0.1	0.4
N SCIENTIFIC ATLANTA INC	20	6	12.38	-0.6	-6.8
N SOUTHWESTERN BELL CORP	46	22	36.00	0.5	1.4
N 3 COM CORP	29	13	19.75	-0.4	-1.9
O TIMEPLEX INC	37	17	32.50	0.0	0.0
O UNGERMANN BASS INC	18	6	12.25	0.6	5.1
N U S WEST INC	60	43	52.75	1.1	2.2
Computer Systems					
O ALLIANT COMPUTER SYS	33	6	5.75	-0.8	-4.2
O ALPHA MICROSYSTEMS	6	3	5.63	0.0	0.0
O ALTOS COMPUTER SYS	18	6	8.63	-0.6	-2.8
A AMDAHL CORP	60	16	46.00	0.8	1.7
O APOLLO COMPUTER INC	25	6	14.38	-0.6	-4.2
O APPLE COMPUTER INC	60	26	38.50	-1.3	-3.1
N BOLT BERANEK & NEWMAN	25	12	15.00	0.5	3.8
O BRITTON LEE INC	4	1	2.00	-0.1	-5.8
N COMPAQ COMPUTER CORP	75	34	48.13	-1.4	-2.8
O COMPUTER AUTOMATION INC	18	6	6.50	-0.6	-8.8
A COMPUTER CONSOLES INC	10	2	7.50	0.4	5.6
O CONCURRENT COMP CORP	24	11	18.75	-1.0	-5.8
N CONTROL DATA CORP DEL	69	16	25.00	-0.6	-1.0
O CONVERGENT TECH	6	3	3.18	0.1	2.0
O CONVEX COMPUTER CORP	16	6	7.63	0.1	1.7
N CRAY RESH INC	118	47	75.38	-0.4	-0.5
O DASEY SYS CORP	10	6	9.25	0.3	2.8
N DATA GEN CORP	37	16	20.50	0.6	1.9
N DATAPOINT CORP	N	3	8.63	0.3	4.7
N DIGITAL EQUIP CORP	220	68	102.38	0.6	0.6
N FLOATING POINT SYS INC	13	3	3.00	-0.6	-7.7
N GOULD INC	34	6	14.38	1.0	7.5
N HARRIS CORP	41	22	27.63	-0.3	-0.8
N HEWLETT PACKARD CO	74	66	80.00	-1.0	-1.8
N HONEYWELL INC	61	49	68.38	-0.6	-0.8
N IBM	175	102	108.50	-0.8	-0.8
O INFORMATION INTL INC	19	6	12.25	0.0	0.0
O IPL SYS INC	3	1	1.50	-0.1	-7.4
O MASS COMPUTER CORP	14	4	4.25	-0.1	-2.9
N MATSUSHITA ELEC INDL LTD	220	103	209.00	-2.0	-0.8
O MEGADATA CORP	N	3	3.00	-0.1	-4.0
O MENTOR GRAPHICS CORP	29	14	20.50	1.0	5.1
N NBI INC	14	4	5.25	1.9	31.9
N NCR CORP	87	60	80.25	1.9	2.6
N PRIME COMPUTER INC	31	13	15.13	-0.6	-3.2
O PYRAMID TECHNOLOGY	14	6	11.25	-1.8	-10.0
O STRATUS COMPUTER	40	19	27.50	-0.3	-0.9
O SUN MICROSYSTEM INC	46	14	32.63	-1.9	-5.4
O SYMBOLICS INC	6	1	1.44	0.1	4.6
N TANDEM COMPUTERS INC	37	16	17.50	-0.1	-0.7
N TANDY CORP	57	38	44.75	0.5	1.1
N ULTIMATE CORP	27	13	13.13	0.1	1.0
N UNISYS CORP	46	24	33.13	0.5	1.9
A WANG LABS INC	18	10	10.13	-0.5	-4.7
Software & DP Services					
O ADVANCED COMP TECH	N	1	1.2	-.1	-4
N AGS COMPUTERS INC	60	11	31.13	3.1	17.4
N AMERICAN MGMT SYS INC	20	6	14.50	0.0	0.0
O AMERICAN SOFTWARE INC	18	6	12.00	-0.1	-1.0
N ANACOMP INC	11	4	10.88	1.8	19.8
O ANALYSTS INTL CORP	10	4	7.75	-0.1	-1.8
N ASHTON TATE	69	13	24.00	-0.6	-2.0
O ASK COMPUTER SYS INC	16	6	13.13	-0.4	-2.8
O AUTODESK INC	34	12	27.00	-0.3	-0.9
N AUTO DATA PROCESSING	69	16	36.50	-1.3	-3.3
O BOOLE & BABBAGE INC	12	6	8.75	0.5	2.6
N COMPUTER ASSOC INTL INC	37	19	28.13	0.1	0.6
O COMPUTER HORIZONS CORP	15	7	6.50	-0.6	-8.4
N COMPUTER SCIENCES CORP	73	66	40.75	0.8	2.2
N COMPUTER TASK GROUP INC	17	6	10.50	-0.6	-5.3
O COSMOS INC.	17	4	6.50	0.6	4.0
O COMSHARE INC	26	12	18.25	-0.5	-3.2
N CULLINET SOFTWARE INC	14	4	7.25	0.5	3.6
O DUQUESNE SYS INC	26	10	18.00	0.5	0.5
N GENERAL MTRS (CLSE)	61	20	41.88	-0.1	-0.8
O HOGAN SYS INC	16	4	4.25	0.1	2.9
O INFORMIX CORP	31	12	17.00	-1.0	-5.4
O INTELLICORP INC	11	2	2.88	-0.1	-3.5
O KEANE INC	18	6	11.50	0.6	0.6
N LOTUS DEV CORP	40	16	31.00	-1.9	-5.8
O MANAGEMENT SCI AMER	18	6	8.38	0.4	4.7
O MICRO PRO INTL CORP	6	3	3.75	-0.1	-4.3
O MICROSOFT CORP	75	37	58.75	-1.0	-1.6
O MORINO ASSOCIATES INC	22	7	10	-0.6	-1.8
N NATIONAL DATA CORP	34	20	22.25	-0.6	-2.7
O ON LINE SOFTWARE INTL INC	22	6	8.75	-0.1	-1.4
O ORACLE SYS CORP	16	6	16.00	0.0	0.0
N PANSOFT SYS INC	20	11	14.63	0.4	2.9
O POLICY MGMT SYS CORP	60	15	33.25	0.0	0.0
O PROGRAMMING & SYS INC	14	7	11.25	0.3	2.5
O REYNOLDS & REYNOLDS CO	66	14	18.00	-0.8	-1.4
O SEI CORP	16	10	17.00	-0.5	-2.9
O SHARED MED SYS CORP	25	16	20.75	0.0	0.0
O SAGE SOFTWARE INC.	20	6	5.88	-0.4	-6.0
O SOFTWARE PUBS CORP	16	6	17.00	-0.4	-2.7
A STERLING SOFTWARE INC	13	6	9.38	0.1	1.3
O SUNGARD DATA SYS INC	20	10	17.00	0.3	1.8
O SYSTEMATICS INC	69	19	31.25	-0.3	-0.3
N SYS. SOFT INC.	24	7	10	0.5	6.6
O VM SOFTWARE INC	60	7	12.75	0.8	6.6
Semiconductors					
N ADV MICRO DEVICES INC	25	6	14.25	0.6	3.7
N ANALOG DEVICES INC	34	6	14.13	0.6	5.6
O ANALOGIC CORP	13	6	6.63	0.6	8.3
O INTEL CORP	42	16	20.29	-1.0	-3.3
O LSI LOGIC CORP	16	7	11.25	0.6	6.6
N MOTOROLA INC	74	33	46.63	0.5	0.0
N NATL SEMICONDUCTOR	22	10	12.75	-0.1	-1.0
N TEXAS INSTRS INC	60	36	43.88	0.5	0.6
A WESTERN DIGITAL CORP	31	11	14.63	-1.4	-8.8
Peripherals					
O ALLOY COMP.	13	3	3.25	.25	-7.1
N AM INTL INC	6	3	3.75	0.1	3.4
O ART RESH INC	21	6	12.50	-0.3	-3.8
O AUTO TROL TECH CORP	7	3	4.75	-0.1	-1.3
O BANCTEC INC	16	6	6.13	0.6	3.2
O CIPHER DATA PRODS INC	13	4	7.75	-0.6	-7.6
A COMMTRONICS CORP	6	3	3.75	-0.5	-8.3
N COMPUGRAPHIC CORP	20	16	28.50	0.1	0.6
A DATAPRODUCTS CORP	34	7	8.25	0.3	2.8
A DATARAM CORP	6	6	6.75	-0.3	-2.8
N DECISION INDS CORP	13	4	4.00	0.0	0.0
N EASTMAN KODAK CO	71	66	40.75	-0.6	-0.6
O E M C CORP MASS	29	6	6.50	-0.1	-1.9
O EMULEX CORP	6	4	7.63	0.1	1.7
O EVANS & SUTHERLAND	35	17	17.13	-0.1	-0.7
O ICOT CORP	6	3	3.00	-0.1	-4.0
O INTERLEAF INC	24	11	14.25	-1.0	-6.8
O KOMEGA CORP	4	1	2.04	0.0	0.0
O LEE DATA CORP	6	3	3.13	-0.6	-7.4
O MAGNETOR SYS CORP	6	1	2.94	0.1	2.2
O MAXTOR CORP	33	6	11.63	-1.0	-7.9
O MICROPOLIS CORP	44	13	21.25	-0.8	-3.4
O MINISCRIBE CORP	18	6	10.50	-0.1	-1.9
N MINNESOTA MINS & MFG CO	84	46	69.00	0.6	1.9
A MSI DATA CORP	16	6	13.38	-0.6	-4.5
O PERSONAL COMPUTER PRODUCTS INC.	7	4	5.63	-0.1	-2.2
O PRIAM CORP	6	1	1.88	0.0	0.0
O PRINTRONIX INC	13	7	9.25	-0.1	-1.9
N QMS INC	27	N	9.25	-1.4	-12.9
O QUANTUM CORP	24	6	6.75	-0.4	-3.7
O MANTEX CORP	6	1	1.25	-0.1	-8.1
N RECOGNITION EQUIP INC	22	7	6.88	-0.6	-9.8
O REXON INC	12	6	7.00	-0.4	-5.1
O SCAN TRON CORP	17	7	14.38	-0.1	-0.N
O SEAGATE TECHNOLOGY	46	10	16.50	-0.1	-0.8
N STORAGE TECH CORP	9	1	1.63	0.0	0.0
O TANDON CORP	7	1	2.13	-0.2	-8.1
A TEC INC	7	3	4.00	-0.4	-8.8
N TEKTRONIX INC	41	31	28.13	0.3	1.0
O TELEVIDEO SYS INC	3	1	1.13	0.1	5.8
N TELEX CORP	60	20	48.00	1.9	2.7
O WYSE TECH	40	11	17.38	0.1	0.7
N XEROX CORP	69	50	61.88	0.6	0.7
O XIDEX CORP	16	6	8.13	0.1	2.5
Leasing Companies					
N CAPITAL ASSOCIATES INTERNATIONAL INC	11	4	6.50	0.6	15.8
N COMDISCO INC	37	12	18.50	-1.0	-4.9
N CONTINENTAL INFO SYS	14	6	7.00	0.6	3.7
O PHOENIX AMERN INC	6	2	3.00	0.0	0.0
O SELECTERM INC	6	3	4.88	-0.1	-2.6

EXCH: N—NEW YORK; A—AMERICAN; O—NATIONAL; O—OVER-THE-COUNTER; S—SPLIT

O-T-C PRICES ARE BID PRICES AS OF 3 P.M. OR LAST BID

(1) TO NEAREST DOLLAR

Skid marks

Compaq, HP, Cray fail to gain control of earlier slides

Sluggish trading offered little braking power for major computer issues caught in earlier slides, as the big losers of two weeks ago again topped the injured list. Chief among the limping as of Thursday's market close was Hewlett-Packard Co., which dived another 3 points after the previous week's 5⅝-point fall to finish the four days of trading at 54⅝. Compaq Computer Corp. also could not shake its funk and slipped 2 points to 47⅝, while Cray Research, Inc. was off again, dropping 1½ points to 75⅝.

In other activity on Wall Street, Lotus Development Corp. was off 1¾ points to 21; IBM slipped 1¼ points to 108¼; 3Com Corp. lost ½ point to 19⅝; and Ashton-Tate Corp. felt the pinch of its announcement that shipments of a revamped Dbase will be two months behind schedule and fell ¼ point to 24¼. But all was not bad news. Rumors swirled that AGS Computers, Inc. could be the next target of a buy-out by a Bell operating company; it shot up 5⅝ points to 25. Apple Computer, Inc. rose ⅝ of a point to 39⅝, and Digital Equipment Corp. was up ¼ point after Merrill Lynch & Co. boosted its short-term rating.

JAMES DALY

'Lights out' at Du Pont data center

BY NELL MARGOLIS
CW STAFF

WILMINGTON, Del. — An experiment in 100% automation — a so-called "lights out" operation — has been up and running successfully since the middle of this month at Du Pont Co., according to a company executive.

During the past several months, all but six of the more than 40 staff members at a small Du Pont data center have been replaced by internally designed computer software, said William Carter, director of computer technology and operations.

The remaining employees of the center, which serves a mix of accounts within the company, are involved in tape-loading activities that did not readily lend themselves to cost-efficient automation, Carter said.

Just a typical center

Before "lights out," he explained, "this was a typical data center, with people sitting at consoles, responding to customer calls and checking machine operations." Making the machines their own masters, he reported, entailed minimal effort and minimal cost. "All we had to do was duplicate a few of the consoles and run some new lines in," he said. "It was surprisingly quick and easy and cost under $100,000 altogether."

The investment will net an estimated $750,000 in savings for Du Pont, "and that's without calculating in the synergies that are gained," Carter said.

A major concern in the automation of the data center, Carter noted, was the redeployment of the people whose jobs were eliminated — particularly since they were instrumental in effecting the conversion process "and basically eliminated their own jobs." All affected employees are now at work elsewhere within the company, Carter reported.

IBM entertains 600 accounts

'Close to the customer' strategy briefing stresses user partnerships

BY STANLEY GIBSON
CW STAFF

In a week-long display of user-friendliness, IBM entertained approximately 600 of its accounts in Orlando, Fla., last week, offering presentations on the firm's strategic directions.

"There was nothing shocking and no change in direction," offered an MIS director at a major New York-based insurance company who attended the session.

He said IBM confirmed reports that the Personal System/2 Model 70 will be announced this Thursday.

The MIS official, a major System/36 user, had been extensively briefed on IBM's System/36 and 38 follow-on processor, Silverlake, and thus did not attend the Silverlake briefing session. He said, however, that IBM confirmed the announcement date of June 21 for the processor.

"The emphasis was on customer partnership," a spokesman said, describing the extravaganza as a continuation of a series of meetings that started in 1987 as part of the so-called Year of the Customer.

"They're starting the ball rolling on Silverlake," offered one consultant, who said he spoke with several attendees. The IBM spokesman, however, said the agenda covered a gamut of topics, including IBM's Systems Application Architecture, workstations, large and mid-range systems and IBM service.

> THE MEETING contained no surprising revelations, and the discussions were not as notable as those held during the 1987 customer meetings.

IBM Chairman John Akers attended the affair, just as he had the first Year of the Customer meeting, which was in Orlando early last year.

One oil industry MIS executive seconded the opinion that the meeting contained no surprising revelations and the discussions were not as notable as those held during the 1987 meetings.

The week's meetings, running from Sunday through Friday, were divided into two parts, with one group of 300 attendees present in the first half of the week and another group attending during the second half of the week. The IBM customers, from both large and small accounts, came from all industries, according to the IBM spokesman.

IBM offered to foot the attendees' hotel bills, but airfare was at the customers' expense, the spokesman said.

Tech whiz

FROM PAGE 1

in his teens and, just a few weeks ago, was profiled by a metropolitan newspaper as the slimmed-down and successful genius behind a rapidly growing software services and consulting firm.

During the past five years, according to sources close to the company, the young entrepreneur wooed a talented staff, usually with promises of huge salaries, flashy cars and other perks of techno-stardom.

He also built a roster of clients, which is "a lot fewer than the 300 or 400 he claims, but a healthy number. The company was definitely growing very well," Gilfix said.

Even as recent press reports lauded Hildreth as a boy wonder and Masedata as a meteor in the Massachusetts computer industry, the company's fall was in the works.

Rockland Trust Co. last Tuesday took possession of Masedata's offices after the company defaulted on a $410,000-plus interest loan and the two high-ranking executives widely known to be in charge of the actual day-to-day business resigned, according to Norman Spector, partner at the Boston law firm representing the bank.

On the same day, a warrant was issued for Hildreth's arrest on a larceny charge, which was "based on a complaint made by a private individual," who was neither an employee of Masedata nor an institution, according to Michael McGorty, spokesman for the Norfolk County District Attorney's office.

In addition, McGorty confirmed that an "ongoing, very active investigation" into Hildreth's affairs by the county's white-collar crime unit is under way.

Man on the run

Hildreth first retreated into a Massachusetts hospital after collapsing in his office and then disappeared after reportedly signing himself out of the hospital. The exact cause of his collapse is unknown.

On Wednesday, Hildreth and his mother, reportedly his first mentor, closest friend and Masedata receptionist, were found by police at a Manchester motel, in grave condition after both apparently took drug overdoses and slashed their wrists. Friday afternoon, both were reported in "fair condition" at Elliot Hospital in Manchester, where Hildreth was arraigned at his bedside as a fugitive from justice.

According to Manchester police captain Mark Driscoll, Hildreth applied for publicly subsidized legal assistance to be provided at the hearing scheduled for June 23; the entrepreneur whose cars and condo were his calling card could not, he said, afford a lawyer.

While it may take a long time to unravel the tangle of fantasy and reality in Hildreth's personal dealings, Gilfix said, one line of demarcation should be clearly drawn: the one between the Masedata CEO and Masedata. "We always had a good business relationship," Gilfix said. "To this day, it worked out well for our mutual clients. Just because Tex drove the company into bankruptcy doesn't mean that he wasn't serving his clients extremely well. He was."

Gilfix's was far from a lone voice in describing Masedata as a solid, responsible company with a strange — sometimes frighteningly so — leader.

"When I first met Tex, he had a nice office, a business card, a BMW — he gave the impression of being a computer whiz, another Steve Wozniak," said a Masedata client who requested anonymity. "He convinced us that he could do a great job for us, so we brought him aboard."

Before long, the client said, his initial feelings of confidence in Hildreth turned to unease. He exaggerated with increasing frequency and flamboyance, according to the client.

"At one point, he told me that the Masedata board of directors consisted of Donald Trump, Frank Lorenzo and [celebrity sports lawyer] Bob Woolf. He offered me a job with Masedata, at an astronomical salary that included a Jaguar and a luxury condo in a complex he said he owned." A quick check into "Hildreth Estates on Hildreth Drive in Weston [Mass.]" turned up the fact that only the town of Weston really existed.

"I finally had to sever the business relationship with Tex; his behavior was getting so weird that I began to actually fear him," the client said. Yet, "even now, I can't fault a thing about the work that Masedata did for us. It was spectacular."

Northwest changes its reservations

ST. PAUL, Minn. — Northwest Airlines last week completed a 15-month conversion effort with the activation of a new worldwide computerized reservation system.

The switch from Northwest's Polaris system to the PARS system was phased in at reservation sites in 135 cities on three continents during a two-day period.

Northwest officials said the airline converted more than 1.7 million passenger reservations to PARS and installed PARS for airline reservations, flight operations and customer service.

The conversion effort began shortly after Northwest's 1986 acquisition of half of the PARS system from Trans World Airlines. Northwest said the acquisition cost $140 million.

Northwest officials said the conversion involved acquisition of hardware and software, programming enhancements to PARS and the training of more than 17,000 airline employees.

PARS's benefits include faster response times and increased functionality, such as the ability to automatically calculate the lowest fare regardless of the complexity of a passenger's itinerary, according to airline officials.

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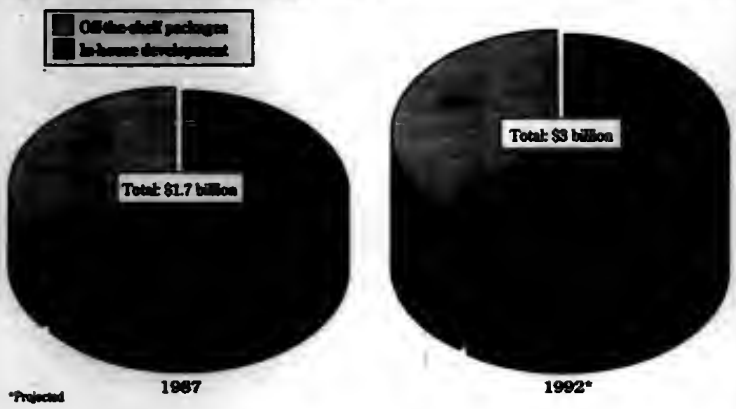
TRENDS

Government software market

Commercial packages dig into development budgets

PERCENT OF AGENCY SOFTWARE EXPENDITURES



*Projected

For years, the White House Office of Management and Budget (OMB) has urged federal agencies to buy off-the-shelf software packages rather than develop software in-house, on grounds that custom software is costly to write and maintain.

According to Input's office for federal market research in Vienna, Va., the federal agencies are taking the OMB's advice but at a somewhat glacial pace.

"The traditional approach is dying hard," said James F. Kerrigan, director of Input's federal program. "It's not something that the OMB can turn around in a year or two."

Indeed, software development expenditures will continue to exceed software product expenditures through 1992, Input reported. But the average annual growth rate for off-the-shelf software products will be 15%, compared with the 11% rate for software development.

Kerrigan said that budget pressures, better software packages and changing attitudes account for the growing "buy, not build" trend.

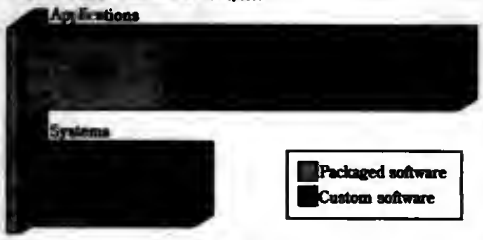
Resistance to the trend comes from managers who see their applications as one-of-a-kind and from the fact that new programmer's workbench tools have cut the cost of in-house programming, Kerrigan added.

Input said that the leading software vendors in the federal market are hardware makers IBM, Unisys Corp. and Digital Equipment Corp. and systems integrators Computer Sciences Corp. and Electronic Data Systems Corp.

MITCH BETTS

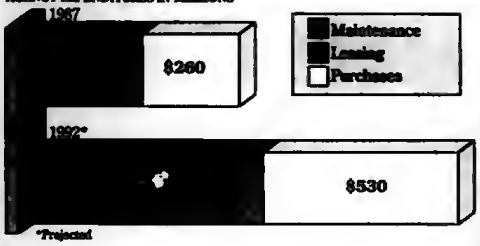
Custom tools popular for applications

AGENCY EXPENDITURES IN MILLIONS, 1987



Purse open widest for leasing, purchases

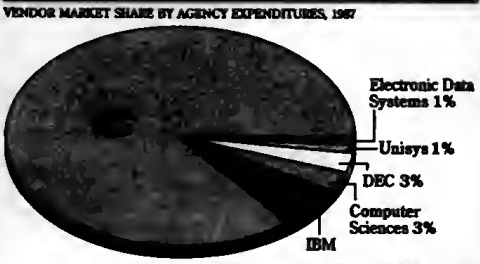
AGENCY EXPENDITURES IN MILLIONS



*Projected

Even top vendors control just tiny share

VENDOR MARKET SHARE BY AGENCY EXPENDITURES, 1987



INFORMATION PROVIDED BY INPUT

INSIDE LINES

Cancel those reservations. Word late last week had it that IBM was canceling its dealer blowout in Dallas, planned for June 2, at which the company was expected to launch its 25-MHz Intel 80386-based Personal System/2 Model 70 line and an enhanced Model 50 before several thousand dealers. IBM still plans to introduce the systems — but in a much more understated fashion in New York on the same date. No reason was given by IBM for the cancellation. However, some speculated that IBM was doing so because it has decided to hold back the introduction of its much-expected laptop systems and its 286-based PS/2 Models 25 and 30. IBM now plans to hold a Dallas affair in late August to introduce those systems, sources said.

Lotus 1-. Lotus is hoping to avoid going to court over charges that 1-2-3 infringed on the copyright of the original Visicalc from Software Arts. Instead of a lengthy trial concerning often esoteric copyright law, Lotus is seeking a ruling that the firm's 1985 acquisition of Software Arts granted rights to the Visicalc product that apply to the period before the acquisition.

Lotus -2. Lotus's Modern Jazz, which is again delayed, is apparently having data base problems. Lotus is trying to do some fancy stuff in that component to differentiate the product some from power spreadsheets that are already out, but the firm hasn't quite got the stuff down.

Lotus -3. According to a Lotus source, Microsoft tried to buy licensing rights to Lotus's Blueprint interface, which allows supporting programs to pump data into 1-2-3 and other Lotus programs, while retaining that swell spreadsheet interface. Microsoft balked, however, at Lotus's asking price, which was way on the steep side.

Anxiety at the altar. Just after ditching its plans to acquire C3, rumors ran rampant on Wall Street last week that AGS Computers, a Mountainside, N.J., professional services provider and microcomputer distributor, is courting acquisition offers. Two regional Bell holding companies, Bell Atlantic and Nynex, have been mentioned as potential suitors. AGS, parent of Microamerica, had revenue of about $500 million in 1987 and would reportedly fetch about $320 million in a takeover. AGS had signed a letter of intent to acquire C3, a Herndon, Va.-based minicomputer and microcomputer systems integrator for government and military applications.

User incompatibility? A suggestion that users groups unite in a coalition to share users group management information and provide a common voice on issues — like the Open Software Foundation standards effort — received a lukewarm reception at a Boston meeting last week. Officials of groups representing customers of IBM, Data General, Unisys, DEC and Tandem asked sponsors of the concept to draft a proposal for the users groups' boards of directors. "I think there is a need here, but it's going to take some time to persuade some of these people," said attorney Peter Marx, who backed the coalition on behalf of the North American Data General Users Group.

Looking under the covers. A federal judge in San Francisco has ordered Hitachi to make its top-secret 1983 agreement with IBM available to an arbitrator in an attempt to establish payment terms in Fujitsu's 1987 arbitration settlement with IBM. An appeals court turned down Hitachi's move to block the order. The 1983 IBM-Hitachi pact, signed to settle Hitachi's alleged theft of IBM's MVS code, has never been made public, but industry sources have estimated Hitachi's license fees to be $300 million.

In a speech last week that surprised users and Lotus officials alike, Lotus founder Mitch Kapor urged listeners to just say no to the Presentation Manager. Kapor indicated — without offering any specifics — that some of the things he and others may pioneer will make the Presentation Manager obsolete. Inquiring minds want to know. Call the CW hot line at 800-343-6474 or 617-879-0700 and help News Editor Pete Bartolik peer through the window on this project.

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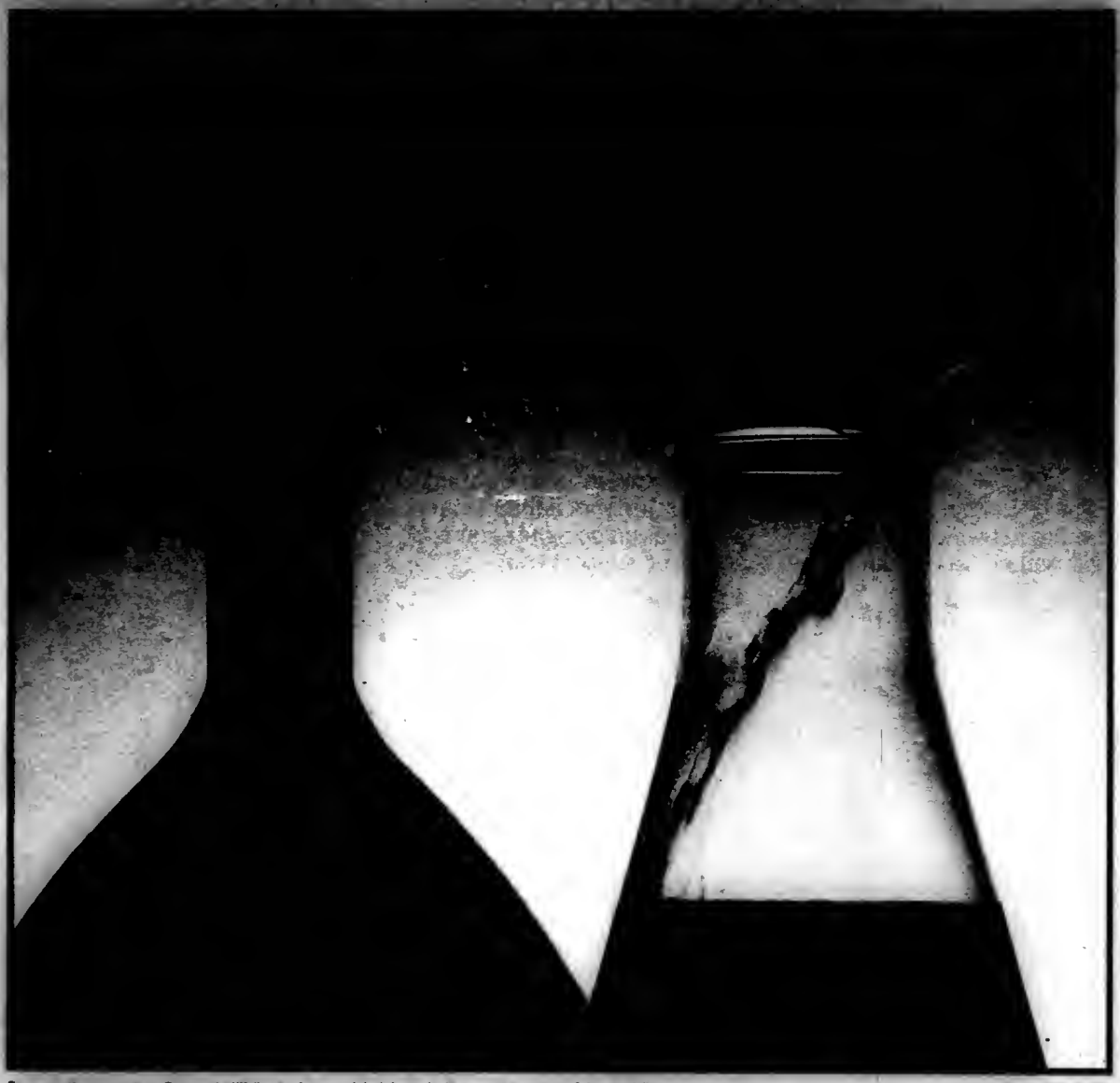

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